Morality, Punishment, and Revealing Other People's Secrets

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Nine studies represent the first investigation into when and why people reveal other people's secrets. Although people keep their *own* immoral secrets to avoid being punished, we propose that people will be motivated to reveal *others'* secrets to punish them for immoral acts. Experimental and correlational methods converge on the finding that people are more likely to reveal secrets that violate their own moral values. Participants were more willing to reveal immoral secrets as a form of punishment, and this was explained by feelings of moral outrage. Using hypothetical scenarios (Studies 1, 3–6), two controversial events in the news (hackers leaking citizens' private information; Study 2a–2b), and participants' behavioral choices to keep or reveal thousands of diverse secrets that they learned in their everyday lives (Studies 7–8), we present the first glimpse into when, how often, and one explanation for why people reveal others' secrets. We found that theories of self-disclosure do not generalize to others' secrets: Across diverse methodologies, including real decisions to reveal others' secrets in everyday life, people reveal others' secrets as punishment in response to moral outrage elicited from others' secrets.

Keywords: disclosure, moral judgment, moral outrage, punishment, secrecy

Supplemental materials: https://doi.org/10.1037/pspa0000284.supp

Fortunately, mindreading is a fiction and not a feature of the real world. Our emotional reactions, our vocal pauses and fillers, our body language, and our eye movements certainly give clues to our stream of inner thoughts, yet our innermost thoughts are locked away from outside access unless we share them with others. For a host of reasons, people keep certain pieces of information locked away. People keep infidelities secret from their partners, drug use secret from family members, an abortion secret from colleagues, illegal behavior secret from friends. Doing so benefits secret keepers by protecting their reputation but also comes with a cost: lower well-being, isolation, and harm to relationships (e.g., Frijns & Finkenauer, 2009; Larson & Chastain, 1990; Larson et al., 2015; Quinn & Chaudoir, 2009; Quinn et al., 2017; Slepian et al., 2017, 2019; Slepian & Koch, 2021).

We know why people keep their *own* misdeeds secret: to avoid the punishment and reputational damage that would follow from the information being known (McDonald et al., 2020; Slepian & Bastian, 2017; Slepian et al., 2020). About 60% of the secrets we keep are known by at least one other person (Slepian et al., 2017). When our personal secrets sit not just in our own heads, but also in the heads of others, it is possible that we might project our personal motivations for keeping the secrets onto those other persons to some extent—believing that known others would be motivated to protect us from punishment and reputational damage. Yet, drawing upon moral psychology and the punishment literature, we propose a darker side of secrecy when it comes to *others'* secrets: Perhaps people generally keep others' secrets—unless they violate their own moral values and produce moral emotional reactions, such as outrage, anger, and disgust. That is, perhaps people are more likely to reveal others' secrets—even people they know in their own lives—*to punish* secret keepers, an effect driven by feelings of moral outrage generated from others' secrets violating one's own moral values.

Drawing upon diverse literatures including privacy, disclosure, morality, justice, and punishment, we present a novel model of one motivation for why people would reveal another person's secret. Across nine studies (and five additional supplemental studies), we present the first investigation into when and why people reveal other people's secrets, examining hypothetical experimental scenarios (Studies 1, 3–6), two controversial events in the news (hackers leaking citizens' private information; Study 2a and 2b), and participants' behavioral choices to keep or reveal thousands of diverse secrets they learned about people they know (Studies 7–8).

Keeping Others' Secrets?

From the small but recently burgeoning literature on secrecy, two things are clear: People keep their own secrets to escape being punished for their misdeeds (John et al., 2016; Slepian & Bastian,

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2017), but people also confide their secrets in others (Slepian & Kirby, 2018; Slepian & Moulton-Tetlock, 2019). Models of personal revelation of one's own secrets include a risk assessment process—weighing protection of the self and relationships against the benefits of revealing (Afifi & Afifi, 2020; Afifi & Steuber, 2010).

Being confided in is associated with feelings of social closeness but also feelings of burden (Slepian & Greenaway, 2018). The more that people feel that they have to keep the secret on behalf of another person, the more burdensome the other person's secret feels (Slepian & Greenaway, 2018; Zhang & Dailey, 2018). We might have learned that a friend has cheated on his or her spouse, a colleague overbills the company, or a family member has a terminal illness. If keeping another person's secret is burdensome, this begs the question: When does a person decide to lift that burden, and—despite the potentially disastrous consequences to the secret keeper—reveal another person's secret?

There are, of course, many important reasons to *not* reveal others' secrets. Revealing others' secrets could ruin secret keepers' lives, as well as the lives of people close to the secret keeper. For example, revealing infidelity could tear families apart, revealing an indiscretion at work could result in someone being fired, and revealing a terminal illness could seriously invade someone's privacy. There are many reasons to be loyal to the secret keeper—particularly when the secret keeper confided the secret directly. Indeed, loyalty has been identified as a key moral foundation (Graham et al., 2013).

Interpersonal transgressions and betrayals are most likely to involve those whom we are closest to (romantic partners, friends, family), and these are the betrayals that sting the most (Hansson et al., 1990; Jones et al., 2001). Despite the incredibly high stakes, extant work has yet to examine how often and why a person might reveal another person's secret.

Moral Judgment and Punishment

People keep their own information secret from those who might judge and punish them (McDonald et al., 2020; Slepian & Bastian, 2017). Because concerns about moral judgment and punishment are so central to the decision to keep secrets, this suggests that the decision to keep or reveal *others'* secrets might reside in the moral domain as well. Morality is a key factor in judging others (Gray & Graham, 2018; Hartley Furr et al., 2016). In particular, witnessing another person engage in an act that violates one's moral values elicits moral outrage and a need to see justice restored through retributive punishment of the transgressor (Carlsmith et al., 2002).

Moral Outrage

Witnessing someone violate one's core moral values can elicit moral emotional reactions, such as moral outrage. Although some argue that moral outrage is merely anger at a moral violation (Batson et al., 2007; O'Mara et al., 2011), it is more commonly characterized as some combination of anger and disgust (Darley & Pittman, 2003; Jensen & Petersen, 2011; Mullen & Skitka, 2006; Okimoto & Brescoll, 2010). There is evidence for anger and disgust's interactive (rather than additive) role in moral outrage: The degree to which participants reported anger at a transgression predicted their level of moral outrage only when it co-occurred with at least moderate disgust (Salerno & Peter-Hagene, 2013).

As has become increasingly clear in our political system and society more broadly, any given behavior may elicit moral outrage in some but not in others. For example, hearing about a taboo sex act might elicit moral outrage in one who holds purity values sacred but might elicit no moral outrage at all in someone who does not hold sexual purity as a moral value. Even within acts that one classifies as morally wrong, there can be substantial variability in how one responds. For example, many people consider littering to be morally wrong—but some may react with little emotion, whereas others might react with intense moral outrage.

Motivation to Punish

Feeling moral outrage is associated with an increased need to punish someone for their moral transgression (Darley & Pittman, 2003; Hofmann et al., 2018; Olatunji & Puncochar, 2014). People are motivated to punish others in proportion to the amount of harm that they believe was caused, thereby delivering transgressors' "just deserts" (Carlsmith et al., 2002). Moral outrage has been conceptualized as an emotional barometer that reflects how much harm has been committed, which then, in turn, determines how much punishment is considered appropriate (Bastian et al., 2013; Carlsmith et al., 2002; Lotz et al., 2011; Okimoto & Brescoll, 2010; Salerno & Peter-Hagene, 2013). Based on this literature, we would predict that people might be more likely to reveal others' immoral secrets that elicit feelings of moral outrage as a form of punishment.

It is important to note, however, that most of what we know about moral judgment and punishment comes from experiments confined to third-party punishment of hypothetical targets or complete strangers—ignoring common targets of moral judgment: family, friends, colleagues, and spouses (Bloom, 2011). Further, several researchers have pointed out that much of the literature on moral judgment has focused on hypothetical and highly bizarre scenarios that most people never encounter in their real lives, such as trolley problems or vignettes describing purposefully unique and novel moral dilemmas, such as whether it is appropriate to eat one's dog (Bauman et al., 2014; Bloom, 2011; Ellemers et al., 2019; Hofmann et al., 2014). Critiques of these methodologies are centered around concerns about low external validity due to the lack of mundane and psychological realism (Bauman et al., 2014) and that these prior methods might instigate psychological processes that differ from everyday moral judgments (Bloom, 2011; Kahane, 2015).

Punishment of strangers is quite relevant to many important contexts, such as our government and legal system. Yet oftentimes punishment occurs among people known to each other in their everyday lives—from disciplinary action taken by supervisors in the workplace to informal punishment of those with whom we have personal relationships. People might feel less moral outrage toward people they know who commit transgressions and be less motivated to punish them. Therefore, it is possible that the magnitude of the moral judgment–punishment link seen in extant work is inflated by exclusively relying on hypotheticals and judgments of strangers. Indeed, a rare investigation of everyday moral judgments found (through daily experience sampling) that feeling socially close with the perpetrator predicts a reduced desire to punish (Hofmann et al., 2018).

Further, people seek to protect close others who commit potentially illegal moral transgressions; they are less likely to report them to authorities in hypothetical scenarios, relative to when they envision the perpetrator is someone more distant (Waytz et al., 2013; Weidman et al., 2020). This prior work bolsters the suggestion that people may feel free to reveal strangers' secrets as a way to punish them but might be less willing to reveal secrets as a means of punishment for moral violations when they know the target.

Although people may not report close others' behavior through official legal channels (per Weidman et al., 2020; Waytz et al., 2013), they might still be willing to punish them through less official channels, such as by revealing their secret. In fact, people justified *not* reporting close others' crimes to the police because they were planning on disciplining them themselves (Weidman et al., 2020). Thus, it is possible that people might still have a greater desire to punish people by revealing their secrets to others when they violate (vs. do not violate) their own morals—even when the secret keeper is someone they interact with in everyday life and confided in them directly.

We thus test whether moral outrage toward others' immoral secrets can be so strong as to actually encourage the revelation of not only strangers' secrets, but also known others' secrets, in part, as a means of punishment for moral violations. In the first part of the article, we examine responses to experimental vignettes and also two real controversial events in the news (Studies 1–6). In the second part of the article, we examine whether the results hold for real secrets kept by known others (Studies 7–8). These latter studies provide novel and strong tests of moral theories of punishment, which have been largely confined to third-party punishment of hypothetical targets or complete strangers. Across experiments and correlational studies of real-life secrets, we examine secrets learned across a variety of means, including those directly confided in the participant (Studies 5–6, 8).

Research Overview

Whereas people keep their own secrets to avoid punishment, we propose that people will be more likely to reveal *others'* immoral secrets *to* inflict punishment upon them. That is, moral emotional reactions to moral violations might override concern with loyalty and others' privacy—even among people we are close with, as reflected by revealing their secrets.

Integrating the reviewed literatures, we propose a model of when people reveal others' secrets: People will be more likely to reveal secrets that violate their moral values as punishment relative to secrets that do not violate their moral values. As noted, what makes one person morally outraged may be shrugged off by another. We thus also predict an indirect effect: the degree to which a secret represents a moral violation, the more moral outrage participants will feel, and in turn, they will be more motivated to reveal the secret to the person's detriment as punishment. We examine multiple contexts, ranging from highly publicized instances of hackers leaking very sensitive personal information to thousands of diverse secrets people personally learned in their everyday lives.

Our independent variable, the *morality of the secret*, was both measured (Studies 2a and 2b, 3, 7–8; Supplemental Studies S1 and S3–S5) and manipulated (Studies 1, 4). Our proposed mediator, *moral outrage*, was assessed in several ways, including a face-valid moral outrage measure in all studies, as well as an anger-and-disgust composite (Studies 2a and 2b, 8; Supplementary Studies S3–S5). We proposed that moral outrage, in turn, would predict our outcome variable: *revealing the secret as punishment*. We directly measured the perceived acceptability of revealing the secret as punishment in most studies (Studies 2a–4, 6–8; Supplementary Studies S1, S3–S5), and we also manipulated a punishment motivation directly (Study 5; Supplemental Study S2). Additionally, we tested whether the theorized psychological process was unique to secret information or generalized to non-secret information (Study 6). Our final studies directly examined whether participants revealed known others' actual secrets in real life (Studies 7–8; Supplemental Studies S3–S5). In sum, we demonstrate support for our theory with both statistical mediation and experimental moderation and we conceptually replicate the effect across many measures and operationalizations.

Finally, we also examined our effect above and beyond alternative explanations for why people might reveal immoral secrets more often: We assessed and controlled for participants' endorsement of revealing the secret to gossip (Molho et al., 2020) about the secret (Studies 5–8, and pre-registered replications: Supplemental Studies S2, S5) and how interesting they found the secret to be (Studies 5–6 and S2).

We followed Fritz and MacKinnon's (2007) sample size recommendations for indirect effects. For small-to-medium *a* and *b* paths, $N = 148$ is needed to find significant bootstrapped, bias-corrected indirect effects (power = .80, α = .05). We thus recruited 150 participants for each study. We report all measures, manipulations, and exclusions, and we report every study that we conducted on this research question. The online supplemental materials report five additional studies and additional measures that demonstrate the robustness of the current results across domains and methodologies, including two pre-registered direct replications. All procedures described for the current research were approved by a local IRB.

Study 1: Immoral Versus Morally Neutral Secrets

A vignette experiment first tested whether people are more likely to reveal a friend's immoral secret than a morally neutral secret.

Method

Online panelists ($N = 150$) were recruited from Amazon's Mechanical Turk (*M-Turk*); 149 completed the study (50% female; 75% White, 7% Black, 10% Hispanic, 6% Asian, 1% "Other"; $M_{age} = 35.57$, $SD_{age} = 12.30$). Participants read a vignette asking them to imagine that they overheard a friend discussing a personal secret, who then disclosed the secret, expressed remorse, and explicitly asked the participant to not tell anyone because they did not want their spouse to find out. Without specifying the content of the secret, they were randomly assigned to imagine that the secret was significant and something that they would consider morally wrong or that the secret was significant but not something they consider to be morally wrong (See Appendix A for full vignette).

Without specifying who exactly they would tell, participants completed a dichotomous choice: "Given the little information

that you have from this vignette, would you:" either *Keep the secret and tell no one* or *Tell at least one person*. They also completed a continuous measure of revelation ("I would reveal their secret," "Revealing their secret would be the right thing to do," "It would be wrong for me to reveal the secret" [reversed] from 1 – *Completely Disagree* to 6 – *Completely Agree*, α = .81). Eight participants (5%) were excluded for failing a manipulation check asking about the content of the vignette.

Results and Discussion

Participants presented with a morally wrong secret reported greater agreement that they should reveal the secret (M = 2.41, SD = 1.33) and that they would be more likely to reveal the secret (33.8%) than those presented with a secret that was not morally wrong (M = 1.73, SD = .93; 14.3%), $t(139)$ = 3.50, p = .001, d = .59, 95% CI on d [.30, 1.05], and χ^2 (N = 141) = 7.34, p = .007, φ = .23, 95% CI on φ [.07, .38], respectively.[1]

This first experiment supported our main prediction that people would be more likely to reveal a friend's secret behavior that includes a moral violation. Despite norms dictating loyalty and privacy values, participants reported being more willing to take on the risk of very likely harming the friend by revealing the immoral secret, relative to a secret that did not include a moral violation.

Study 2a (Revealing Infidelity) and Study 2b (Revealing Abortion Records)

Studies 2a and 2b were designed to test whether revealing others' immoral secrets would extend to more specific real-life scenarios. Our Study 2 designs also enabled us to take into account individual differences in how immoral participants judged the secret behavior to be. Focusing on two specific secret behaviors (i.e., infidelity, Study 2a; abortion, Study 2b) also enabled us to assess our proposed mediator (i.e., participants' moral outrage toward the transgression). We capitalized on participants' reactions to two highly publicized current events in the weeks following the events to test our theory.

Study 2a focused on revealing infidelity. In 2015, hackers exposed user data from Ashley Madison (AM), a dating website marketed toward people in committed relationships (slogan: "Life is short. Have an affair."). The incident sparked a firestorm of debate regarding whether it was morally wrong to violate users' privacy by revealing their secrets, or whether revealing their secrets was appropriate punishment for their immoral behavior (infidelity). In Study 2b, we tested our theory in the context of a more divisive issue: abortion; information that 80% of women (who have had an abortion) keep secret from at least some people (Slepian et al., 2017). In 2012, an antiabortion activist hacked Britain's largest abortion provider, threatening to release patient records. The incident again sparked debate about whether doing so was wrong or justifiable as punishment for what some considered murdering unborn children.

In both studies, we hypothesized that the degree to which participants perceived the secret keepers' (i.e., AM users, Study 2a; abortion clinic patients, Study 2b) secret behavior to be morally wrong would predict increased moral outrage toward the secret keepers, which would be associated with greater agreement that revealing the secret (i.e., AM users' infidelity, Study 2a; clinic

patients' abortions, Study 2b) to the world as a form of punishment is appropriate.

Method

Participants were *M-Turk* panelists (Study 2a: N = 150, 55% female; 83% White, 7% Black, 5% Hispanic, 3% Asian, 1% "Other," M_{age} = 35.15, SD_{age} = 11.19; Study 2b: N = 138, 38% female, 78% White, 6% Black, 8% Hispanic, 6% Asian, 2% "Other," M_{age} = 34.04, SD_{age} = 9.57). In Study 2b, we sought to maximize variance in moral judgments about abortion by recruiting 75 conservatives and 75 liberals via two simultaneous *M-Turk* advertisements seeking opinions from liberals and conservatives about current events; 138 completed all measures. In Study 2b only, participants reported their political orientation from 1 – *Extremely Liberal* to 7 – *Extremely Conservative* (M = 3.64, SD = 1.92); 51% identified as Liberal, 9% identified as Moderate, and 40% identified as Conservative.

Materials

In Study 2a, participants read a *New York Times* article entitled "The Ashley Madison Data Dump Explained," which explained that users' personal information (e.g., name, address, phone number, sexual preferences) were released by hackers stating that they did so because of "the fraud, deceit, and stupidity of AM and their members." In Study 2b, participants read three brief paragraphs from an article in *The Guardian* entitled "Abortion website hacker caught," which described how someone hacked into Britain's biggest abortion provider's system to publicly post 10,000 of their patients' records because he disagreed with their decision "to kill unborn children," which he called "murder."[2] The article also pointed out that this was one of several instances of people stealing and revealing abortion records (see the online supplemental materials for full stimuli).

Measures

Participants first completed *moral judgments* by indicating "How morally wrong was it to [use the Ashley Madison website to

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[1] In this preliminary experiment (Study 1), we also assessed participants' moral outrage toward their friend and their support for revealing the secret as punishment. Although this initial design was well suited to test the overall effect of moral violations on revealing secrets, in hindsight, we realized it was not an ideal test of our explanatory mechanisms because to measure the mechanism we asked for reports of highly emotional reactions to scenarios that did not provide any details about the act they were judging (i.e., not reactions to specific behaviors). Indeed, the results were consistent with our theory, but mixed. Participants felt more morally outraged about hypothetical immoral secrets (M=3.85, SD = 1.10) relative to morally neutral secrets (M = 2.39, SD = 1.12), $t(139)$ = 7.79, p < .0001, d = 1.31, 95% CI on d [1.09, 1.86]. Yet, their desire to punish was low and similar toward immoral (M = 1.93, SD = 1.31) and morally neutral (M = 1.70, SD = 1.05) secrets, $t(139)$=1.14, p = .255, d = .19, 95% CI on d [.17, .63]. In all subsequent studies we included specific behaviors that have potential to rouse enough moral emotion and punishment motivation to assess these process-based constructs reliably, which indeed resulted in consistent mechanism support for our hypotheses in all other studies.

[2] The original article stated accurately that the hacker intended to release the records but did not do so in the end. To make the Study 2b materials a closer replication of Study 2a, we modified the article to say that the hacker, in fact, released the records.

commit adultery/have gotten an abortion]?," from 1 – *Perfectly Ok* to 100 – *Extremely Wrong*.

Next, they indicated their *Moral Outrage* by indicating their agreement with "I am morally outraged by the [AM users' behavior/clinic patients who got an abortion]," from 1 – *Strongly Disagree* to 6 – *Strongly Agree* (Skitka et al., 2004). As an additional operationalization of the affective components of moral outrage, participants completed a grid measure designed to disentangle how angry and disgusted participants felt on simultaneous 5-point scales ranging from *Not at All* to *Extremely* (Salerno & Peter-Hagene, 2013; see Appendix B). To capture the interactive nature of the anger and disgust relationship with moral outrage, we multiplied anger and disgust scores to represent their level of moral outrage (Salerno & Peter-Hagene, 2013).

Finally, participants indicated how much they agreed with the statement "I think that revealing the [Ashley Madison users'/abortion clinic patients'] secrets was an appropriate and reasonable form of punishment for their [adultery/abortion decisions]." from 1 – *Strongly Disagree* to 6 – *Strongly Agree*. See Table 1 for descriptive statistics.

Results and Discussion

Indirect Effect

First, we tested the hypothesized indirect effect of moral judgment on revealing through participants' level of moral outrage. In Study 2a, the degree to which participants perceived infidelity to be wrong was significantly associated with feeling greater moral outrage and, in turn, moral outrage was significantly associated with greater agreement that revealing the secret as punishment is appropriate. Indeed, the indirect effect through moral outrage was significant (See Figure 1a).

In Study 2b, we replicated these results in the context of a more morally divisive issue: a hacker who released abortion records (see Table 1). We again found that the degree to which participants agreed that abortion was wrong was significantly associated with feeling greater moral outrage and, in turn, moral outrage was associated with significantly greater agreement that revealing the secret as punishment is appropriate. This hypothesized indirect effect through moral outrage was again significant (Figure 1b). Statistically controlling for sample (i.e., political orientation) in Study 2b did not change the results: The indirect effect through moral outrage toward clinic patients remained significant, $M_{indirect\ effect}$ = .01, SE = .004, 95% CI [.01, .02].

Anger and Disgust

We also tested whether the alternative operationalization of moral outrage would be a significant mediator: a combination of anger and disgust (as per Salerno & Peter-Hagene, 2013). In Study 2a, when people perceived the adulterers' behavior to be more immoral, they reported more anger and disgust, b = .11, SE = .02, 95% CI [.07, .15], t = 5.01, $p < .0001$, and in turn, feeling more anger and disgust was related to increased support for revealing the adultery as punishment, b = .06, SE = .02, 95% CI [.02, .09], t = 3.21, p = .002. This indirect effect through the anger-and-disgust composite was significant, $M_{indirect\ effect}$ = .01, SE = .002, 95% CI [.002, .01]. We did not, however, replicate this indirect

effect in Study 2b, $M_{indirect\ effect}$ = .004, SE = .003, 95% CI [−.003, .01], because the combination of anger and disgust did not significantly predict revealing the abortion records as punishment, b = .03, SE = .02, 95% CI [−.01, .08], t = 1.59, p = .11.[3]

Total Effect

This psychological process resulted in a significant total effect of moral judgment on support for revealing the secret in both studies. That is, in Study 2a, believing the secret behavior (i.e., adultery) is morally wrong was significantly associated with increased support for revealing AM users' adulterous behavior as punishment, b = .01, SE = .01, 95% CI [.005, .02], t = 3.20, p = .002. In Study 2b, believing the secret behavior (i.e., abortion) to be morally wrong was significantly associated with increased agreement that revealing clinic patients' abortion secrets as punishment would be appropriate, b = .01, SE = .002, 95% CI [.01, .02], t = 5.26, $p < .001$. Moral judgments still predicted agreement that revealing the secret as punishment is appropriate when political orientation was included as a covariate in Study 2b, b = .01, SE = .003, 95% CI [.003, .02], t = 3.14, p = .002.

Across both studies, judging the secret behavior (i.e., Ashley Madison users' secret affair-seeking behavior, clinic patients getting an abortion) to be morally wrong was associated with them agreeing that it would be appropriate to reveal the AM users' adulterous behavior and clinic patients' abortions as a form of punishment.

We also identified a mechanism linking moral violations to revealing secrets as punishment. We found that this was, at least in part, driven by participants' emotional response. The effect of a moral violation on support for revealing the secret was explained by an increase in moral outrage in both studies. In Study 2a (but not 2b) this indirect effect was significant regardless of whether we used the face-valid moral outrage measure, or an anger-and-disgust composite measure.

Studies 2a and 2b replicated our experimental finding from Study 1 in reference to two very different real-life secret behaviors and provided empirical support for the theory that the effect is driven by moral outrage. Further, we established that endorsing revealing adultery and abortion-seeking behaviors as an appropriate punishment depended on the extent to which the behavior violated the perceiver's own moral values.

Study 3: Experimentally Inducing a Moral Lens

Study 3 implemented an experimental design. We again predicted that secret moral violations would increase moral outrage, which in turn would predict greater agreement that revealing another's secret as punishment is appropriate—but Study 3 sought to experimentally moderate this result by inducing a moral framing.

We manipulated a focus on morality by asking participants to consider the morality of the secret behavior before (i.e., moral

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[3] Our findings in both studies replicated with single-mediator models. More specifically, the Study 2a indirect effect replicated with single-mediator models including just anger, $M_{indirect\ effect}$ = .004, SE = .002, 95% CI [.001, .008], and just disgust, $M_{indirect\ effect}$ = .01, SE = .003, 95% CI [.005, .02] as the mediator. The Study 2b null indirect effect replicated for single-mediator models with just anger, $M_{indirect\ effect}$ = .006, SE = .003, 95% CI [−.001, .01], and just disgust, $M_{indirect\ effect}$ = .01, SE = .004, 95% CI [−.001, .02], included as mediators.

Table 1

Descriptive Statistics and Correlations for Moral Judgments, Moral Outrage, and Revealing Secrets as Punishment (Studies 2a and 2b)

Measures	M(SD)	B r(p)	C r(p)	D r(p)
Study 2a: Infidelity				
Moral judgments about secret keeper's behavior (A)	80.65 (26.26)	.54 (<.001)	.38 (<.001)	.26 (.002)
Moral outrage toward secret keeper (B)	4.07 (1.62)		.65 (<.001)	.38 (<.001)
Anger and disgust composite (C)	8.88 (7.37)			.33 (<.001)
Revealing secret as punishment (D)	3.37 (1.52)			
Study 2b: Abortion				
Moral judgments about secret keeper's behavior (A)	40.87 (39.35)	.83 (<.001)	.74 (<.001)	.41 (<.001)
Moral outrage toward secret keeper (B)	2.68 (1.68)		.81 (<.001)	.52 (<.001)
Anger and disgust composite (C)	5.69 (6.61)			.39 (<.001)
Revealing secret as punishment (D)	1.78 (1.24)			

Note. Moral judgments were assessed from 1 (*Perfectly Ok*) to 100 (*Extremely Wrong*). Moral Outrage was assessed from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*). Anger and disgust were assessed from 1 *Not at all* to 5 *Extremely*, which were multiplied together and therefore range from 1 to 25. Agreement that Revealing the Secret as Punishment is appropriate was assessed from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*).

frame) versus after (i.e., no moral frame) deciding whether to reveal the secret. We predicted that experimentally creating a moral "lens" would strengthen our hypothesized indirect effect. That is, we tested whether the moral framing would moderate the indirect effect of moral judgments on revealing through moral outrage. Further, we tested the generalizability of this hypothesized effect by testing it in the context of 20 common secrets that one could feasibly learn in everyday life.

Method

Participants, Procedure, and Design

M-Turk panelists (N = 150; 52% female; 77% White, 10% Black, 10% Asian, 3% "Other; M_{age} = 36.91 years, SD_{age} = 12.12) were given a list of 20 behaviors drawn from a list of secrets that individuals commonly keep (Slepian et al., 2017), such as hurting someone, abortion, infidelity, poor work performance, and so forth (see Table 4 for the list of secrets, also used in Studies 7–8).

Our manipulation randomly assigned participants to one of two conditions: judging the morality of a secret before deciding how appropriate it is to reveal it (i.e., through a moral framing, similar to Studies 1–2b), or deciding whether to reveal the secret before any mention of morality.

More specifically, participants were randomly assigned to either complete (a) moral judgment and moral outrage measures about a specific behavior *immediately before* judging how appropriate it would be to reveal the secret as punishment (then repeating this procedure for each secret behavior), or (b) report how appropriate it would be to reveal all 20 secret behaviors as punishment before any mention of morality, followed by a block of moral judgment and moral outrage measures for each of the 20 behaviors.

Measures

For each secret behavior, participants indicated (a) "How morally wrong is it for someone to [secret behavior]?" from 1 – *Perfectly Ok* to 10 – *Extremely Wrong* (i.e., moral *judgments*), (b) agreement with the statement "I would feel morally outraged if someone [secret behavior]" from 1 – *Strongly Disagree* to 6 – *Strongly Agree*, and (c) "For each item on this list, imagine that

you know a person who secretly did that behavior. Do you think that revealing this secret as a way to punish this person for what they did would be an okay thing to do?," from 1 – *Perfectly Ok* to 10 – *Extremely Wrong*. We reverse scored the *revealing secrets as punishment* measure, such that higher numbers indicated it was more acceptable to reveal the secret.

Results and Discussion

See Table 2 for descriptive statistics. Rather than average over participants or secrets, to maximize power we analyzed our data with multilevel modeling, accounting for random variance from participant and secret category; this yields more powerful analyses. We used the R-package lme4 to implement mixed-effects models (Bates et al., 2015); lme4 models were run through Satterthwaite approximation tests to calculate p-values (Kuznetsova, Brockhoff, & Christensen, 2013). We bootstrapped the product of regression paths from multilevel modeling (1,000 iterations) to test indirect effects.
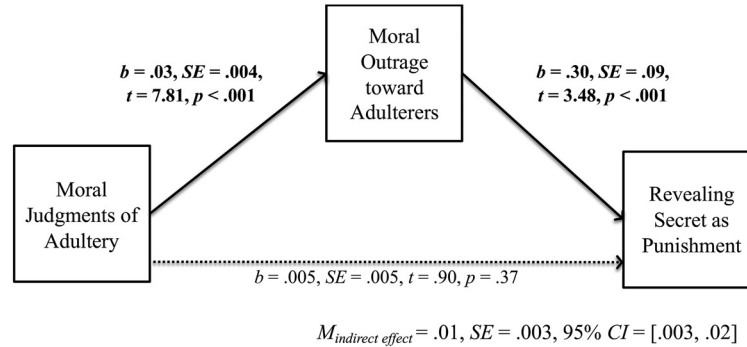
Indirect Effects

We replicated the hypothesized indirect effect of moral judgments of secret behaviors on acceptance of revealing the secret as punishment through moral outrage across 20 different secrets, both in (a) the moral-frame condition, $M_{indirect\ effect}$ = .23, SE = .001, 95% CI [.15, .32] and (b) the no-moral-frame condition, $M_{indirect\ effect}$ = .12, SE = .001, 95% CI [.06, .18]—but the indirect effect was indeed stronger for the former moral framing condition (see the following moderated mediation analysis and Figure 2).

An index of the difference between the two conditional indirect effects did not include zero and therefore indicated significant moderation by the moral frame manipulation, index = .07, SE = .001, 95% CI [.01, .12]. This indicates that moral judgments were a significantly stronger predictor of support for revealing the secret through moral outrage in the moral-frame condition, relative to those who were not exposed to the moral framing. This difference was attributable to moral outrage being a significantly stronger predictor of acceptance of revealing the secret in the moral-frame condition relative to the no-moral-frame condition—that is, the interaction between moral outrage and the moral framing interaction was significant: b = −.26, 95% CI

Figure 1

The Indirect Effect of Moral Judgments on Revealing Secrets as Punishment through Moral Outrage Toward the Secret Keeper

a. *The Indirect Effect of Moral Judgments on Revealing Secrets as Punishment through Moral Outrage toward the Ashley Madison Users (Study 2a).*

$M_{indirect\ effect} = .01, SE = .003, 95\% CI = [.003, .02]$

b. *The Indirect Effect of Moral Judgments on Revealing Secrets as Punishment through Moral Outrage toward the Abortion Clinic Patients (Study 2b)*

$M_{indirect\ effect} = .02, SE = .004, 95\% CI = [.01, .02]$
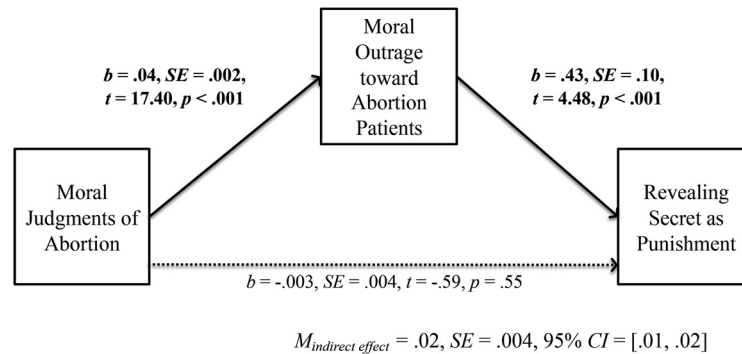
Note. Significant paths are denoted by solid lines and bolded coefficients. The path from moral judgment to revealing the secret as punishment represents the direct effect of the independent variable on the dependent variable (i.e., while controlling for the mediator).

[−.49, −.04], $SE = .11$, $t = 2.28$, $p = .02$ (see Figure 2 for individual path coefficients in each condition). Thus, we found our predicted indirect effect generalized across 20 diverse secrets in both conditions—even when the participants were not prompted to think about the morality of the secret before reporting support for revealing it.

Total Effect

This psychological process again resulted in a significant total effect across 20 different secrets: Perceiving a secret behavior to be morally wrong was significantly associated with acceptance of revealing the secret as punishment, $b = .36$, $SE = .02$, 95% CI [.32, .40], $t = 17.78$, $p < .001$.

This study demonstrated that the endorsement of revealing immoral secrets as punishment was explained by moral outrage and generalizes across 20 of the most commonly kept secrets. Further, we demonstrated that this process is robust to when we do *not* focus people on the morality of the secret behavior beforehand. In other words, the results suggest that this is a natural process that occurs even when we do not artificially induce a moral frame. That said, this study also

provided experimental evidence for the role of moral judgment in deciding to reveal a secret: Making people think about the morality of a secret behavior caused an increased likelihood that their moral outrage about the secret was associated with greater agreement that revealing the secret as punishment would be appropriate. Thus, the correlational and experimental evidence converge on demonstrating the role of perceived morality in the decision to reveal another's secret.

Study 4: Manipulating the Morality of Secrets

Study 4 directly manipulated the morality of the secret itself to further establish the causal role of moral violations on the decision to reveal secrets. That is, similar to Study 1, Study 4 manipulated our independent variable: moral violations.

To examine morality causally, we manipulated whether the 20 secrets from Study 3 were committed intentionally or unintentionally—while holding all other aspects of the behavior constant. It is well-established that people judge intentional acts to be more morally wrong than accidental acts (e.g., Cushman, 2008; Cushman et al.,

Table 2

Moral Judgments, Moral Outrage, and Support for Revealing Secrets (Studies 3-5)

Measure	Study 3		
	No moral frame (n_{Ss} = 74, $n_{Secrets}$ = 1,480)	Moral frame (n_{Ss} = 76, $n_{Secrets}$ = 1,520)	Total (n_{Ss} =150, $n_{secrets}$ = 3,000)
Moral judgments about secret behavior	5.92 (3.17)$_a$	5.89 (3.33)$_a$	5.91 (3.25)
Moral outrage toward secret keeper	3.57 (1.74)$_a$	3.44 (1.79)$_a$	3.51 (1.77)
Revealing secret as punishment	4.73 (3.10)$_a$	4.64 (3.10)$_a$	4.69 (3.10)
	Study 4		
	Less immoral secret (less intent) (n_{Ss} = 150, $n_{Secrets}$ = 1,220)	More immoral secret (more intent) (n_{Ss} = 150, $n_{Secrets}$ = 1,780)	Total (n_{Ss} = 150, $n_{Secrets}$ = 3,000)
Moral judgments about secret behavior	4.49 (2.96)$_a$	6.17 (2.94)$_b$	5.33 (3.06)
Moral Outrage toward secret keeper	2.73 (1.59)$_a$	3.59 (1.64)$_b$	3.16 (1.67)
Revealing secret as punishment	2.55 (1.58)$_a$	3.20 (1.70)$_b$	2.88 (1.67)
	Study 5		
	Unpunished (n_{Ss} = 151, $n_{Secrets}$ = 366)	Punished (n_{Ss} = 151, $n_{Secrets}$ = 389)	Total (n_{Ss} = 151, $n_{Secrets}$ = 755)
Moral Outrage toward secret keeper	4.30 (1.36)$_a$	4.00 (1.44)$_b$	4.15 (1.41)
Revealing secret as punishment	2.99 (1.54)$_a$	2.74 (1.40)$_a$	2.86 (1.47)
Likelihood of revealing secret	4.93 (3.13)$_a$	4.28 (3.11)$_b$	4.60 (3.14)

Note. Moral judgment = "How morally wrong is it for someone to... [secret behavior]?" (1 – *Perfectly OK* to 10 – *Extremely Wrong*). Moral outrage = "I would feel morally outraged if someone... [secret behavior]" (1 – *Strongly/Completely Disagree* to 6 – *Strongly/Completely Agree*). Punish (Study 3) = "Do you think that revealing this secret as a way to punish this person for what they did would be an okay thing to do?"... "If someone secretly... [secret behavior]..." (1 –*Perfectly OK*... to 10 – *Extremely Wrong*); reverse-scored so that higher numbers reflected greater support for revealing secrets as punishment. Punish (Studies 4–5) – "Revealing their secret would be an appropriate form of punishment" (1 – *Completely Disagree* to 6 – *Completely Agree*). Likelihood of revealing the secret (Study 5) – "How likely would you be to reveal the secret to at least one person (1 – *0% Likely* to 11 – *100% Likely*). The n_{Ss} value represents the number of participants in each condition, and the $n_{Secrets}$ value represents the total number of secrets that the participants rated (nested within participants). Differing subscripts within a row denote significant differences at $p < .01$.

2006; Young et al., 2007)—even children aged 3–8 are influenced by the intentionality of a target's actions when making moral judgments (Cushman et al., 2013; Nobes et al., 2009). Moral judgment of intent has been argued to be a key, innate facet of "universal moral grammar" (Mikhail, 2007).

We predicted that reading about more intentional (i.e., more immoral) versions of the same secret behaviors would produce greater moral outrage than less intentional (i.e., less immoral) versions, which, in turn, would be associated with greater agreement that revealing them as punishment would be appropriate.

Method

Participants, Design, and Procedure

M-Turk panelists (*N* = 150; 55% female; 77% White, 9% Black, 7% Asian, 6% "Other," M_{age} = 35.81 years, SD_{age} = 11.69) were given a set of 20 vignettes, based on 19 of the same 20 behaviors drawn from secrets individuals commonly keep (Slepian et al., 2017) used in Study 3 (Table 4 for descriptions), such as hurting someone, infidelity, poor work performance, and so forth. We did not create an abortion vignette because of the difficulty of

Figure 2

The Indirect Effect of Moral Judgments on Revealing the Secret as Punishment Through Moral Outrage (Study 3)
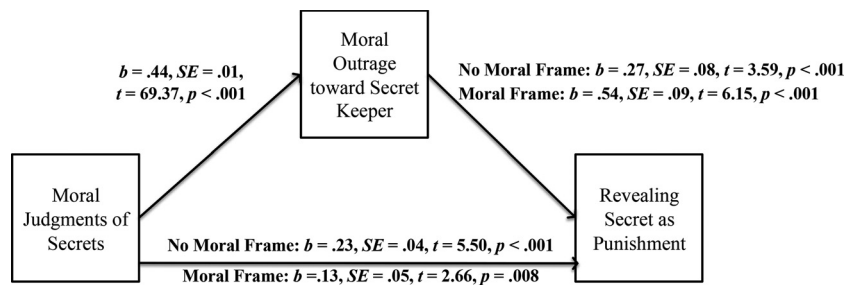
Note. Each reported path (i.e., unstandardized regression coefficient) controls for prior predictors. Thus, the path from moral judgment to revealing the secret as punishment represents the direct effect of the independent variable on the dependent variable while controlling for the mediator. Significant paths are denoted by solid lines and bolded coefficients.

generating an "unintentional" version; instead, we replaced the abortion scenario with a new scenario describing unintentional versus intentional physical harm to someone else (see Appendix C for all vignette versions by intent condition).

For each of the 20 vignettes (presented in a randomized order), participants randomly received either a more or less intentional version of each secret behavior. For example, participants read a theft vignette describing a woman who either (a) intentionally stole a piece of jewelry or (b) accidentally stole a piece of jewelry after her child put it in the pocket of her jacket.

Measures

For each vignette, participants completed the same Study 3 measures of *moral judgments* (now considered a manipulation check, i.e., "How morally wrong do you think it was for [person in vignette's name] to have done this?" from 1 – *Perfectly OK* to 10 – *Extremely Wrong*) and *moral outrage* (i.e., "If someone I know were to do this, I would feel moral outrage toward that person," from 1 – *Strongly Disagree* to 6 – *Strongly Agree*) from Study 3. For each secret, they were next told, "Imagine someone you know did this, but they want it to be secret. Please indicate your agreement with the following statement: Revealing their secret would be an appropriate form of punishment." from 1 – *Completely Disagree* to 6 – *Completely Agree*.

Results and Discussion

Analyzing the data via multilevel modeling (as per Study 3; i.e., analyzing each moral judgment nested within participants), we found that our manipulation was successful. The intentional secret behaviors were perceived as more immoral than unintentional secret behaviors, $b = 1.74$, 95% CI [1.58, 1.90], $SE = .08$, $t(2866.56) = 21.50$, $p < .0001$ (see Table 2 for descriptive statistics).

Indirect Effect

As predicted, when participants read about more immoral versions of secret behaviors (i.e., intentional acts vs. less intentional acts) they were more morally outraged, which was associated with more agreement that revealing the secret as punishment is appropriate (see Figure 3). Thus, through moral outrage, we replicated the hypothesized indirect effect of moral violations on agreement that revealing the secret as punishment is appropriate, $M_{indirect\ effect} = .48$, $SE = .001$, 95% CI [.42, .53] (see Figure 3)—but now resulting from manipulated (rather than measured) morality of the secret behavior.

Total Effect

This psychological process again resulted in a significant total effect. More specifically, reading about intentional (vs. less intentional) secret behaviors significantly increased agreement that revealing the secret as punishment would be appropriate, $b = .62$, $SE = .05$, 95% CI [.53, .71], $t = 13.40$, $p < .001$.

Reading about a relatively more immoral version of a secret behavior relative to the same behavior that was committed unintentionally increased agreement that revealing a secret behavior as punishment would be appropriate—an effect explained by increased moral outrage. Our manipulation thus provides converging evidence for the causal role of moral violations on endorsement of revealing secrets, as well as moral outrage as a mechanism. Further, Study 4 finds that the results of Studies 2–3 generalize to situations in which

participants are envisioning someone in their own life (rather than a stranger) and generalize across diverse types of secrets.

Study 5: Manipulating Punishment Motivation

In Studies 3 and 4 we manipulated moral framing and the morality of the secret, respectively. We successfully showed that morality has a causal effect on both moral outrage and agreement that revealing the secret would be an appropriate form of punishment—while holding all other aspects of the behavior constant.

Rather than specifically ask participants how much they agree with revealing secrets as punishment, we next directly manipulated a punishment motivation and asked whether they would reveal the secret. To manipulate a punishment motivation, we exposed participants to a set of immoral secrets, and experimentally manipulated whether the secret keeper had already been punished, or not (based on the notion that punishment is less necessary when the person has already been punished).

We hypothesized that if people reveal immoral secrets as a means of punishing immoral behavior, then reading about immoral secrets that have *already* been punished should reduce moral outrage and the likelihood of revealing the secret, relative to reading about the same immoral secrets that have gone unpunished. Additionally, we focused specifically on confided secrets, thus our vignettes dictated that the secret was confided in the participant by the person who engaged in the secret behavior.

We also included an alternative mediator: Perhaps participants reveal immoral secrets more because they think they are more gossip-worthy. Gossip is a related, but distinct, concept, defined as talking judgmentally or evaluatively about a person who is absent (e.g., Fernandes et al., 2017)—which can refer to information that is secret or public. There can be overlap. For instance, gossiping about someone can be motivated by moral concerns (Fernandes et al., 2017) and moral disgust (Molho et al., 2020).

Although these constructs can sometimes overlap, they are not redundant with one another. A general proclivity to gossip would explain an increase in gossiping about others' secrets, even if one is not specifically trying to punish the secret keeper. And likewise, one could specifically intend to reveal a secret as punishment, but only to a key individual without the intent to gossip more broadly. To isolate unique variance explained by each motivation (i.e., punishment, gossip), we examined both as simultaneous predictors of revealing the secret. We also included a measure of how interesting they thought the secret was to account for the possibility that people might be inclined to reveal more interesting secrets relative to less interesting secrets—even without a motivation to gossip or punish.

Method

Participants

To diversify our sample sources, Study 5 recruited from a different online pool: Prolific Academic ($N = 150$; 59% female; 68% White, 11% Black, 11% Asian, 10% "Other," $M_{age} = 31.64$ years, $SD_{age} = 12.46$).[4]

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[4] Only one Study 5 participant had a questionable response to the open-ended attention check, but removing that one participant did not change the results. Thus, we report the full sample.

Figure 3
The Indirect Effect of Morality Manipulation on Revealing the Secret as Punishment Through Moral Outrage (Study 4)
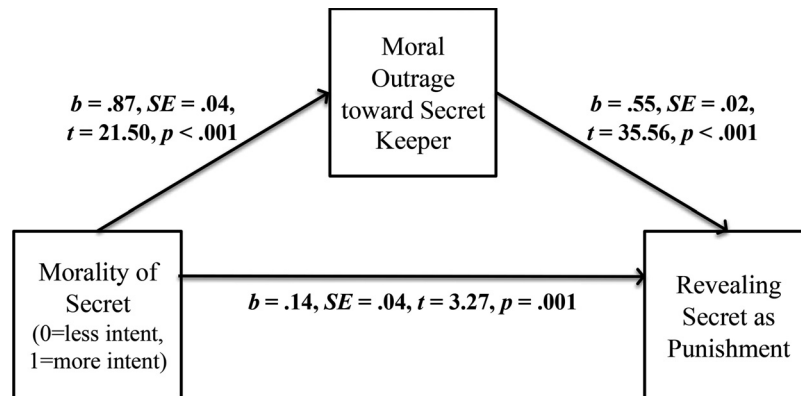
Note. Significant paths are denoted by solid lines and bolded coefficients. Each reported path (i.e., unstandardized regression coefficient) controls for prior predictors (e.g., the effect of moral outrage on support for revelation controls for moral judgments of the secret). Thus, the path from morality of the secret to revealing the secret as punishment represents the direct effect of the independent variable on the dependent variable while controlling for the mediator.

Materials

Participants were given a set of five vignettes, based on the immoral versions of five of the 20 behaviors used in Studies 3–4 (drawn from secrets individuals commonly keep; Slepian et al., 2017) including theft, infidelity, using illegal drugs at work, academic cheating, and lying on a resume to get a job.

First, the vignettes were all modified to depict scenarios in which someone the participant knew (i.e., a friend, coworker, family member) directly confided the secret in the participant and made it clear that they wanted it kept secret.

Second, the vignettes were modified to create two versions of each: one in which the secret keeper had been punished already for the immoral secret behavior and another in which the same secret immoral behavior went unpunished. For example, a coworker was caught doing drugs at work and his supervisor either gave him a warning or prevented him from getting a big promotion that he had been a top candidate for (see Appendix D for all vignettes).

Procedure

Participants were randomly assigned to read the "already punished" or "not punished" version of each vignette (presented in a random order) and completed reveal decision measures after each one. After reading and making reveal decisions about all five vignettes, participants completed a second block of measures, in which they were presented with each of the vignettes again. Per each vignette, they completed measures of moral outrage, a punishment manipulation check, and covariates (i.e., gossip-worthiness and level of interest of each secret).

Measures

Participants completed two measures of *revealing*: (a) a dichotomous item asking "Given the little information that you have from this vignette, would you:" either *Keep the secret and tell no one* or *Tell at least one person the secret*, and (b) an 11-point continuous measure of how likely they would be to reveal the secret asking "How likely would you be to reveal the secret to at least one other person?" from *0% Likely* to *100% Likely*. Participants completed the same 6-point *moral outrage* item from Study 4.

After having completed the reveal dependent measures, participants completed punishment motivation manipulation checks (in a second block) asking, "Based on what you read, how severely do you think your [friend/cousin/coworker] was punished for their actions?" on a 6-point scale from *Not punished at all* to *Severely punished*. We also included our measure of how much they agreed that revealing the secret as punishment would be appropriate, which was now considered a manipulation check of our punishment motivation manipulation.

To rule out alternative explanations, participants also completed two covariates, 7-point measures of "How gossip-worthy do you think your [for example, cousin's] behavior is?" and "How interesting do you think your [for example, cousin's] story is?" ranging from *Not at all* to *Extremely*. Finally, they completed demographics and an open-ended attention check.

Results and Discussion

Analyzing the data via multilevel modeling (as per Studies 3–4; i.e., analyzing each vignette nested within participants), we found that our manipulation was successful. The "already punished" secret behaviors were perceived as having been more severely punished than unpunished secret behaviors, $b = 1.51$, 95% CI [1.34, 1.68], $SE = .09$, $t(675.39) = 17.61$, $p < .0001$. The punished secret behaviors also elicited less punishment motivation in that participants thought it was less appropriate to reveal the secret as punishment when it had already been punished, relative to when it had not, $b = -.23$, 95% CI [−.40, −.07], $SE = .08$, $t(634.25) = -2.79$, $p = .005$ (see Table 2 for descriptive statistics).

Indirect Effect

To test our hypothesized indirect effects involving the dichotomous outcome (i.e., decision to reveal or not), we had to modify our mediation analysis strategy to still account for the multilevel nature of the data but now also a binary outcome. There currently is no consensus on how to conduct multilevel mediation nor how one should test indirect effects when the unit of the first path (i.e., an unstandardized regression coefficient from a Gaussian model due to a continuous outcome) differs from the unit of the second path (i.e., a log-likelihood value from a binomial model due to a binary outcome). We used a formula for calculating indirect effects that addresses both issues (Iacobucci, 2012; e.g., Sun & Slepian, 2020). Each path coefficient was divided by its standard error, and we multiplied the resulting z-values; this product is then divided by the pooled standard error (i.e., the square root of the sum of the two squared z values and one), yielding the *Zmediation* coefficient, of which its statistical significance can be tested by a z test.

As predicted, when participants read about immoral secret behaviors that had already been punished, they felt less moral outrage than when they read about the same secrets going unpunished, $b = -.33$, 95% CI $[-.49, -.16]$, $SE = .08$, $t(665.32) = -3.86$, $p < .001$, which was associated with decisions to reveal the secret, $B = .47$, $SE = .09$, $OR = 1.61$, 95% CI $[1.36, 1.91]$, $z = 5.52$, $p < .0001$. That is, reading that a secret immoral behavior

has already been punished decreased the moral outrage they felt, which in turn was associated with participants being less likely to reveal the secret. Accordingly, we found a significant indirect effect of manipulated punishment motivation on the dichotomous decision to reveal the immoral secret through reduced moral outrage, $Z_{Med} = -3.20$, 95% CI $[-5.16, -1.24]$, $p = .001$.

Next, we tested whether the hypothesized indirect effect through moral outrage would remain significant above and beyond how gossip-worthy and how interesting they thought the secret was (see Figure 4).

The indirect effect of manipulated punishment motivation on the dichotomous decision to reveal the immoral secret through moral outrage remained significant but was *not* significant through how gossip-worthy or interesting participants found the secret to be. As can be seen in Figure 4, although the degree to which they found the secret gossip-worthy and interesting was related to deciding to reveal the secret, whether the secret had been punished or not did not affect how gossip-worthy or interesting the secret was, and moral outrage still predicted the decision to reveal above and beyond these factors.

Total Effect

Reading about already punished (vs. unpunished) immoral secrets significantly decreased dichotomous decisions to reveal the

Figure 4

The Indirect Effect of Punishment Motivation Manipulation on Decisions to Reveal the Secret Through Moral Outrage, Gossip-Worthiness, and Interest in the Secret (Study 5)
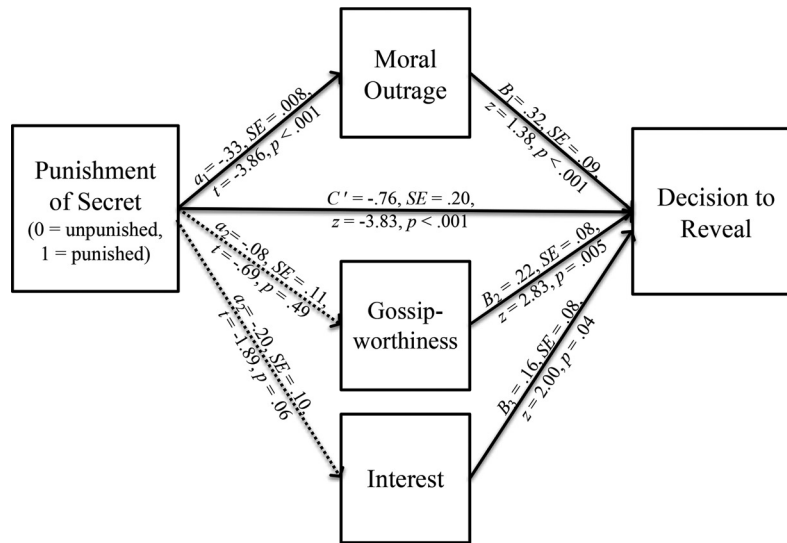
Indirect Effects:
Moral Outrage: $ZMed_{indirect} = -2.65$, 95% CI $= [-4.61, -.69]$, $p = .008$
Gossip: $ZMed_{indirect} = -.66$, 95% CI $= [-2.62, 1.30]$, $p = .51$
Interest: $ZMed_{indirect} = -1.33$, 95% CI $= [-3.29, .63]$, $p = .18$

Note. Significant paths are denoted by solid lines, and non-significant paths are denoted by dotted lines. Each reported path (i.e., unstandardized regression coefficient) controls for prior predictors (e.g., the effect of moral outrage on support for revelation controls for moral judgments of the secret). Thus, the path from punishment of the secret to the decision to reveal represents the direct effect of the independent variable on the dependent variable while controlling for the mediators.

secret overall, $B = -.88$, $SE = .19$, $OR = .42$, 95% CI [.28, .60], $z = -4.59$, $p < .0001$. In other words, participants were less than half as likely to reveal the secret if the secret had already been punished, compared with reading about the same secret immoral behavior that had gone unpunished. This total effect of the punishment manipulation on the binary decisions to reveal also remained significant after controlling for gossip-worthiness and interest, $B = -.85$, $SE = .20$, $OR = .43$, 95% CI [.29, .63], $z = -4.28$, $p < .001$. We also replicated our pattern of results on the continuous measure of likelihood of revealing the secret (see the online supplemental materials for details).

This experiment provided causal evidence for the role of punishment motivation in the decision to reveal hypothetical immoral secrets confided by friends, coworkers, and family members. Whether or not the same immoral secret had already been punished directly decreased the likelihood that the participant would reveal it—before ever being asked to think about the morality, gossip-worthiness, or their interest in the secret. Further, we found evidence that this effect was explained by feelings of moral outrage, but not how gossip-worthy or interesting they thought the secret was.

In conjunction with experiments manipulating moral framing (Study 3) and the morality of the secret (Study 4), these findings provide experimental evidence of the proposed mediating process to support our correlational models. The decision to reveal secrets confided by close others is due, at least in part, to an affective moral outrage reaction to immoral secrets and a desire to see them punished. In further support, we conducted a pre-registered direct replication of Study 5, which replicated our focal effects (pre-registration available at https://osf.io/6p97b/?view_only=3be233a338494451b10c10118c42f2c7) and is described in detail in the online supplemental materials (Study S2).

Study 6: Secret Versus Non-Secret Information

Studies 1–5 demonstrate a psychological process involved in deciding to reveal others' secrets: The moral outrage produced by moral violations relates to punishment motivation and revealing the secret as a form of punishment—above and beyond what can be explained by their greater desire to gossip about immoral secrets (or finding them more interesting). Next, we test whether this psychological process is unique to secret information. We again presented participants with a set of potentially immoral behaviors, but experimentally manipulated whether the information was secret or non-secret.

We hypothesized a moderated mediation model, such that the motivations for revealing immoral *secret* information will differ from the motivations for revealing *non-secret* immoral information. More specifically, we hypothesized that *secret* versions of the scenarios would replicate our previous findings: The more an individual is morally outraged by secret behaviors, the more they will report that revealing the secret as punishment would be appropriate, and in turn, they would be more likely reveal it.

In contrast, when the same behaviors were *not* secret, we did not expect punishment motivation to explain why people reveal *non-secret* immoral information. This prediction is based upon prior research that demonstrates that secrets are not the same as non-secrets, holding constant the behavior (Slepian & Bastian, 2017; Slepian et al., 2019). Recall that in Study 5, if secret keepers had already been punished in some way, participants were less

morally outraged and less likely to reveal the secret. By this pattern, if people perceive non-secret information as having already been punished because people already knew the shameful information, then we would expect any desire to reveal non-secret information would be less about punishment, and instead reflect another motivation: gossip. Thus, we predicted that participants will perceive more immoral behaviors to be more worthy of punishment and gossip and more interesting. However, we predict that a *punishment* motivation will mediate the effect of moral outrage on revealing *secrets*, whereas we predict that *gossip* and *interest* motivations will mediate the effect of moral outrage on revealing *non-secret* information.

More specifically, we predict that in the non-secret condition, the more participants report that they think the information is interesting and gossip-worthy, the more likely they will be to reveal it. In contrast, in the secret condition, the more participants report increased punishment motivation, the more likely they will be to reveal it.

Method

Participants

Our goal was to again recruit 150 participants from Mechanical Turk, but owing to a recruitment programming error we recruited 182 participants (46% female; 68% White, 12% Black, 11% Asian, 9% "Other," $M_{age} = 41.21$ years, $SD_{age} = 12.91$).[5]

Materials

Participants were given a set of seven vignettes drawn from secrets individuals commonly keep (Slepian et al., 2017); five were from Studies 5–6 (i.e., theft, infidelity, using illegal drugs at work, academic cheating, and lying on a resume to get a job) and we added two more to this study (i.e., abortion, addiction).

Similar to Study 5, the vignettes all depicted scenarios in which someone the participant knew (i.e., a friend, coworker, family member) directly revealed the information to the participant. The vignettes were modified to create two versions of each: one in which it was clear that the information was meant to be kept secret, and another in which it was clear that it was not meant to be kept secret (either by the confidant explicitly saying they were not keeping it a secret and were fine with others finding out, or because it had already been made public). For example, a friend who got caught plagiarizing a class paper, got off with a warning, and either said that *he didn't care if people heard about it* or said that *he didn't plan on telling anyone else* (see Appendix E for all vignettes).

Measures

Participants completed the same measures as in Study 5 (that is, dichotomous and continuous measures of likelihood of revealing the secret, moral outrage toward the target, punishment motivation, how interesting and gossip-worthy the information was, demographics and an open-ended attention check). The only modification we made was to the revealing measures, such that we kept them the same in

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[5] Only one Study 6 participant had a questionable response to the open-ended attention check, but removing that one participant did not change the results. Thus, we report the full sample.

Table 3

Moral Outrage, Punishment, and Revealing as a Function of Secret Versus Non-Secret Information (Study 6)

Measure	Secret information (n_{Ss} = 180, $n_{Secrets}$ = 1,165)	Non-secret information (n_{Ss} = 180, $n_{Secrets}$ = 1,165)	Total (n_{Ss} = 180, $N_{secrets}$ = 1,165)
Moral outrage toward secret keeper	3.71 (1.67)$_a$	3.78 (1.63)$_a$	3.75 (1.65)
Revealing secret as punishment	2.71 (1.55)$_a$	2.66 (1.53)$_a$	2.68 (1.54)
Likelihood of revealing	4.29 (3.29)$_a$	5.21 (3.35)$_b$	4.76 (3.35)
Decision to reveal	.41 (.49)$_a$	.55 (.50)$_b$	.48 (.50)

Note. Moral outrage = "I would feel morally outraged if someone... [secret behavior]" (1 – *Strongly/Completely Disagree* to 6 – *Strongly/Completely Agree*). Punish = "Revealing their secret would be an appropriate form of punishment" (1 – *Completely Disagree* to 6 – *Completely Agree*). Likelihood of revealing the secret - "How likely would you be to reveal [the secret/what you learned] to at least one person (1 – *0% Likely* to 11 – *100% Likely*). Decision to reveal = 0 – *Keep the [secret/information you learned to yourself] and tell no one*, 1 – *Tell at least one person [the secret/what you learned]*. The n_{Ss} value represents the number of participants in each condition, and the $n_{Secrets}$ value represents the total number of secrets that the participants rated (nested within participants). Differing subscripts within a row denote significant differences at $p < .01$.

the secret conditions (e.g., for the dichotomous measure participants chose between *Keep the secret and tell no one* or *Tell at least one person the secret*), but in the non-secret condition they choose between *Keep what you learned to yourself and tell no one* or *Tell at least one person what you learned.*

Procedure

Participants were randomly assigned to read the secret or non-secret version of each vignette (presented in a random order) and completed revelation decision measures after each one. After reading and making reveal decisions for each of the seven vignettes, participants then completed a second block of measures, in which they were presented with each of the vignettes again. Per each vignette, they completed measures of moral outrage, punishment motivation (predicted to be more relevant to the secrets), and gossip-worthiness and level of interest (the two motivations we expected to be more related to revealing non-secret information).

Results and Discussion

See Table 3 for descriptive statistics. We used the same analysis strategy as from earlier to account for the multilevel data (i.e., analyzing each moral judgment nested within participants). As in Study 5, we calculated *Zmediation* coefficients (to account for the dichotomous outcome) and test their significance via *z* tests, and we report each path below.

We found support for our hypothesis that people are more likely to reveal information that they consider to be immoral for different reasons when it comes to secret versus non-secret information.

Indirect Effects

For all indirect effect statistics and path coefficients, see Figure 5. For secret versions of the immoral information, we replicated our hypothesized indirect effect of moral outrage on the decision to reveal the secret through acceptance of revealing the secret as punishment. The more moral outrage they felt, the more they thought it was appropriate to reveal the secret as punishment, which in turn predicted them being significantly more likely to reveal it. The indirect effects of moral outrage on decisions to reveal were not significant through gossip or interest. Thus, for secret versions of the information, the moral outrage increasing revealing was driven by a motivation to punish.

As predicted, when the information was *not* secret, we did not replicate the indirect effect of moral outrage on the decision to reveal the information through increased punishment motivation (See Figure 5). When the information was not a secret, punishment motivation no longer significantly predicted revealing decisions. Instead—as predicted—when the information was not a secret, the indirect effects of moral outrage on decisions to reveal were significant through gossip and interest (though the effect through interest was only at the threshold of significance). The more moral outrage they felt about the behavior, the more interesting and gossip-worthy they thought it was, which in turn predicted them being more likely to reveal the information. Thus, when the information was not secret, moral outrage predicted revealing through the immoral behavior being more interesting to talk about and gossip-worthy, rather than by a motivation to punish.

The difference in these indirect effects was attributable to acceptance of revealing the secret as punishment being a significant predictor of decisions to reveal in the secret condition, but not in the non-secret condition—that is, the interaction between the secret motivation and revealing as punishment was significant: $B = .32$, $SE = .12$, $z = 2.61$, $p = .008$ (see Figure 5 for individual path coefficients in each condition).

Total Effect

This psychological process again resulted in a significant total effect across seven different scenarios: Feeling more moral outrage about a confidant's behavior was significantly associated with deciding to reveal the information to someone else, $B = .33$, $SE = .07$, $z = 4.57$, $p < .001$, although (unsurprisingly) people were significantly less likely to reveal the information when it was described as a secret relative to when it was not a secret, $B = -1.16$, $SE = .39$, $z = -2.99$, $p = .003$. The interaction was not significant, $B = .07$, $SE = .09$, $z = .75$, $p = .45$. Again, results with the continuous measure of likelihood of revealing the secret supported our model (see the online supplemental materials).

Regardless of whether the information was secret or not, participants reported being more likely to reveal information that generates moral outrage. Critically, however, their reasons for doing so were very different depending on whether the information was secret or not secret.

When a *secret* was confided, it was the degree to which participants thought revealing the immoral behavior was an appropriate way to punish that predicted their decision to reveal it to others—

Figure 5

The Indirect Effect of Moral Outrage on Decisions to Reveal Through Punishment Motivation, Gossip-Worthiness, and Interest in the Secret (Study 6)
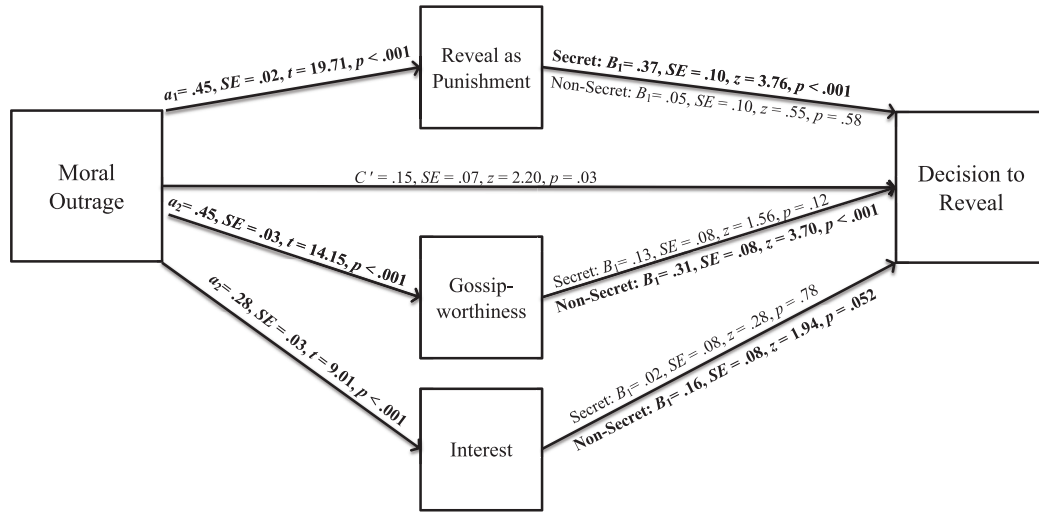
Indirect Effects (Secret Condition):
Punishment: $ZMed_{indirect}$ = 3.65, 95% CI = [1.69, 5.61], p < .001
Gossip: $ZMed_{indirect}$ = 1.61, 95% CI = [-.35, 3.57], p = .11
Interest: $ZMed_{indirect}$ = .25, 95% CI = [-1.71, 2.21], p = .80

Indirect Effects (Non-Secret Condition):
Punishment: $ZMed_{indirect}$ = .12, 95% CI = [-1.84, 2.08], p = .91
Gossip: $ZMed_{indirect}$ = 3.74, 95% CI = [1.78, 5.70], p < .001
Interest: $ZMed_{indirect}$ = 1.94, 95% CI = [-.02, 3.90], p = .05

Note. Each reported path (i.e., unstandardized regression coefficient) controls for prior predictors (e.g., the effect of moral outrage on the decision to reveal represents the direct effect of the independent variable on the dependent variable while controlling for the mediators). Significant paths (at $p \leq .05$) are denoted by bolded coefficients.

gossip and interest did not play a significant role in their decision to reveal secret information. Yet, this explanation did not generalize to learning the same information in the context of it *not* being a secret. Instead, when the information was not secret, it was the degree to which they found immoral behaviors more interesting and gossip-worthy that predicted their decision to reveal it to others—punishment did not play a significant role in their decision to reveal non-secret information.

In sum, revelation as punishment for something morally outraging is something more reserved for secrets, whereas revelation of morally outraging behavior for gossip or interesting conversation is more reserved for non-secrets. Thus, the psychological process we have documented is unique to secrets and did not generalize to when the same information was not secret.

Study 7: Revealing Secrets in Everyday Life

Seven studies demonstrated that people support revealing secrets as punishment when they violate their own moral values in real-life scenarios involving secrets held by strangers (Studies 2a–2b) and hypothetical scenarios about people they know (Studies 1, 3–4) and who have specifically confided in them (Studies 5–6). That said, it might be relatively easy to suggest that one would reveal a secret (or punish someone in general) when they know it is hypothetical, or when one has no relationship with the secret keeper and will therefore not have to deal with the aftermath of the harms done to the secret keeper by revealing the secret.

To provide a particularly strong test of our theory, we tested whether the desire to punish someone by revealing his or her secret would generalize to real secrets known about others in participants' everyday lives. Our final studies thus examined participants' actual decisions to reveal real secrets that they learned about people whom they know (Study 7, and replication studies, Supplemental Studies S3 and S4)—even those who directly confided the secret in them (Study 8; Supplemental Study S5).

We again hypothesized that the degree to which participants thought secret behaviors were morally wrong would predict increased moral outrage and agreement that revealing as punishment is appropriate—which we then examined as predictors of whether they *actually* revealed the secret to a third party in real life.

Method

M-Turk panelists (*N* = 150; 60% female; 85% White, 7% Black, 5% Asian, 3% "Other"; M_{age} = 38.26 years, SD_{age} = 14.92) were told that we were interested in their reactions to the 20 behaviors from Study 3 in general (rather than it being about, or making any mention of, secrets).

First, participants completed measures of moral judgment and moral outrage about each behavior in one block. These were the same items from Study 4, but no longer directed at specific instances of secret behaviors, but now at the general behavior category (i.e., "How morally wrong is it for someone to [insert behavior]?" and "I would feel morally outraged if someone I know [insert behavior].").

After all moral judgment and outrage items were completed, for each secret category, participants were told, "For each item on this list, imagine that you know a person who secretly did that behavior. Do you think that revealing this secret as a way to punish this person for what they did would be an okay thing to do?" from 1 – *Perfectly OK* to 10 – *Extremely Wrong*, which we reverse scored. They reported the acceptability of revealing each behavior (a) as punishment in one block (as reported above) and (b) as gossip; the two blocks were presented in a randomized order.

In a final block of questions, participants reported whether they had ever learned that someone they know secretly engaged in each of the 20 behaviors. And then, for each secret that they had learned in real life, they indicated whether they had ever revealed it to anyone (*yes*, *no*).

Results

Among our 150 participants, 148 had discovered at least one secret and, overall, learned 2,064 secrets. They revealed 620 (30%) of them (see Table 4).

Indirect Effects

To replicate the hypothesized indirect effects, we used the same Z_{Med} analysis strategy from Studies 5–6. An initial mediation model (not pictured) replicated the prior studies: moral judgments of secret behaviors predicted agreement that revealing the secret as punishment would be appropriate through moral outrage, $Z_{Med} = 5.30$, 95% CI [3.34, 7.26], $p < .0001$.

Critically, the hypothesized serial model extended to *actual revelations*. More specifically, there was a significant indirect effect of moral judgments on revealing secrets through moral outrage and agreement that revealing the secret as punishment is appropriate (controlling for the acceptability of revealing the secret as gossip), $Z_{Med} = 12.34$, 95% CI [10.38, 14.30], $p < .0001$ (see Figure 6 for all paths). Thus, the indirect effect replicated even though we asked about moral judgments of general behaviors in the abstract before ever mentioning the concept of learning or revealing secrets.

Second, as one would expect from the gossip literature, the parallel indirect effect through *gossip* was also significant (controlling for the punishment motivation), $Z_{Med} = 12.51$, 95% CI [10.55, 14.47], $p < .0001$ (see Figure 6). Critically, the path through endorsement of revealing secrets as punishment existed above and beyond this indirect effect through endorsement of revealing secrets as gossip. Thus, Study 7 provides support for our hypotheses now in relation to people that participants know in real life and actual revelations, while also accounting for the effect of thinking that moral violations as more gossip-worthy.

Total Effect

This psychological process again resulted in a significant total effect. Perceiving a behavior to be morally wrong, in the abstract, was associated with a greater likelihood that the participant actually revealed someone else's secret involving that specific behavior to someone else in real life, $B = .08$, $SE = .03$, $OR = 1.09$, 95% CI [1.04, 1.15], $z = 3.38$, $p < .001$. With each one-unit

increase in judgments of perceived immorality (on a 10-point scale), our participants were 9% more likely to reveal the secret.

In further support of our hypothesized model, we replicated these patterns of results in two additional studies with near-identical methodology (simply presenting the measures in different orders; Supplemental Studies S3 and S4).

Study 8: Revealing Confided Secrets in Everyday Life

Next, we replicated Study 7 in the more specific circumstance of *confided* secrets. One could argue that people might have learned many of the secrets reported in Study 7 through circumstances outside of direct confiding—such as accidentally overhearing (e.g., where loyalty is less an issue) or hearing it from another person (e.g., where the norms for revealing might seem more acceptable). If the secret was learned through means outside of confiding, this might make it easier for participants to feel good about revealing the information.

Thus, consistent with the experimental vignettes of Studies 5–6 (and Supplemental Study S2), we tested whether our findings about real secrets from Study 7 generalize to situations when a person directly confided in the participant. In addition, we also included the alternative operationalization of moral outrage (i.e., the anger-and-disgust composite) and again included the acceptance of revealing the secret as gossip as an alternative mediator.

Method

As in Study 5, we recruited from Prolific Academic to broaden our participant sample sources ($N = 152$; 66% female; 68% White, 14.5% Black, 12.5% Asian, 5% "Other," $M_{age} = 33.22$ years, $SD_{age} = 11.79$).[6]

The design, materials, measures, and procedure were nearly identical to Study 7, with two exceptions. First, in the first block when participants were making moral judgments about each behavior in general, we added the anger-and-disgust composite measure of moral outrage: For each secret behavior category (e.g., hurting another person physically, using illegal drugs) they completed two 6-point scales asking how much they agree with the statements that "I would feel [angry/disgusted] if someone I knew [insert secret behavior]" for each behavior, ranging from *Strongly Disagree* to *Strongly Agree*. We again multiplied these two items together to create the anger-and-disgust composite (Salerno & Peter-Hagene, 2013).

Second, in the final blocks, we reframed the study to ask specifically about secrets that had been specifically confided in the participants rather than secrets that they had learned about known others through unspecified means. In the second block when we measured punishment and gossip motives, participants were told, "For each item on this list, imagine that someone you know told you that they had secretly done that behavior. Do you think that revealing this secret as a way to punish this person for what they did would be an okay thing to do?" on the same 10-point scales from

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[6] Only one Study 8 participant had a questionable response to the open-ended attention check but removing that one participant did not change the results. Thus, we report the full sample.

Table 4
Descriptive Statistics for Moral Judgments, Moral Outrage, and Revealing Secrets (Study 7)

Secret Type	% (n) Learned the secret	Moral judgments	Moral outrage	Reveal as punishment	Reveal as gossip	% (n) Revealed the secret
1. Hurt another person	45% (67)	8.85 (1.37)	5.03 (1.08)	5.43 (3.48)	4.88 (3.34)	40% (27)
2. Illegal drug use	79% (119)	6.53 (2.54)	3.73 (1.59)	4.03 (2.86)	4.05 (2.87)	34% (40)
3. Secret habit or addiction (non-drug related)	52% (78)	5.52 (2.35)	3.33 (1.32)	3.42 (2.48)	3.33 (2.52)	24% (19)
4. Theft	67% (100)	8.74 (1.40)	5.01 (1.02)	4.98 (3.36)	4.48 (3.17)	37% (36)
5. Illegal activity	58% (86)	7.86 (1.84)	4.57 (1.16)	4.42 (2.98)	4.20 (2.86)	35% (30)
6. Physical self-harm	51% (76)	6.93 (2.41)	3.96 (1.41)	3.62 (2.93)	3.55 (2.91)	40% (30)
7. Had an abortion	55% (83)	4.85 (3.38)	2.78 (1.75)	2.85 (2.63)	2.49 (2.41)	23% (19)
8. Lied to someone	93% (138)	6.48 (2.17)	3.63 (1.27)	4.09 (2.74)	4.13 (2.78)	46% (63)
9. Romantic desire while single	83% (123)	2.29 (2.25)	1.57 (1.09)	3.08 (2.66)	3.84 (3.05)	25% (31)
10. Unhappy in a relationship	86% (128)	3.08 (2.46)	2.07 (1.30)	3.20 (2.74)	3.35 (2.55)	30% (39)
11. Extrarelational romantic thoughts	75% (111)	6.43 (2.65)	3.74 (1.48)	3.29 (2.52)	3.27 (2.40)	24% (26)
12. Emotional infidelity	59% (89)	6.67 (2.42)	3.87 (1.36)	3.90 (2.81)	3.60 (2.68)	18% (16)
13. Sexual infidelity	66% (99)	8.45 (1.88)	4.83 (1.26)	4.50 (3.16)	3.76 (3.00)	31% (30)
14. Was the "other man/woman"	63% (95)	7.73 (2.23)	4.51 (1.33)	4.22 (2.98)	3.79 (2.86)	28% (27)
15. Mental health issues	78% (116)	2.06 (2.09)	1.56 (1.12)	2.86 (2.89)	2.70 (2.63)	28% (33)
16. Cheated at work/school	69% (103)	7.21 (2.16)	4.11 (1.31)	4.47 (2.96)	4.11 (2.87)	28% (29)
17. Lied to get a job/into school	47% (70)	6.91 (2.32)	3.96 (1.42)	4.57 (3.02)	4.09 (2.77)	26% (18)
18. Performed poorly at work (or school)	83% (124)	3.79 (2.50)	2.40 (1.30)	3.52 (2.77)	3.67 (2.76)	26% (32)
19. Work discontent	87% (130)	2.36 (2.24)	1.73 (1.23)	3.02 (2.66)	4.05 (2.97)	37% (48)
20. Planning a surprise for someone	87% (129)	1.71 (1.90)	1.46 (1.17)	3.09 (3.06)	4.14 (3.33)	21% (27)

Note. Moral judgments were assessed from 1 (*Perfectly Ok*) to 10 (*Extremely Wrong*). Moral Outrage was assessed from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*). Revealing the Secret as Punishment and Gossip were assessed from 1 (*Perfectly Ok*) to 10 (*Extremely Wrong*) and were reverse scored. The percentage who learned the secret is relative to the full sample, and the percentage who revealed the secret is relative to only those who had learned the secret. The secret names have been abbreviated; for full descriptions see Table S2 in the online supplemental materials.

Extremely Wrong to *Perfectly OK* as in Study 7, which we again reverse scored.

In the third block, for each behavior, we asked participants "We want to know whether at any time someone else that you know told you that they secretly engaged in one of the below behaviors. Has anyone you know told you that they had secretly done any of the following?" and, per each of the 20 behaviors, chose between *Yes, a person with this secret told me about having this secret* and *Nobody has confided a secret like this in me.*

Finally, in the fourth block, per each *Yes* from the preceding block, participants were asked "You said that at some point someone you know told you that they had secretly [for example, hurt another person physically]. Did you reveal this secret to anyone?" with the choice of *Yes* or *No*.

Results and Discussion

Among our 152 participants, 149 had discovered at least one secret and, overall, learned 1,843 secrets. They revealed 475 (26%) of them overall (see Table 5).

Indirect Effects

To test the indirect effects, we used the same *Zmed* analysis strategy from Studies 5–7 and found that the serial model from Study 7 replicated. More specifically, there was a significant indirect effect of moral judgments on revealing secrets through moral outrage and agreement that revealing the secret as punishment is appropriate (controlling for the acceptability of revealing the secret as gossip), $Z_{Med} = 24.06$, 95% CI [22.10, 26.02], $p < .0001$ (see Figure 7 for each path). Thus, the indirect effect replicated again despite moral judgments of general behaviors taken in the abstract before ever mentioning the concept of

learning secrets, and even though we examined the specific context of revealing *confided* secrets.

Second, as one would expect from the gossip literature, the parallel indirect effect through *gossip* was also significant (controlling for punishment motivation), $Z_{Med} = 7.94$, 95% CI [5.98, 9.90], $p < .0001$ (see Figure 7). Critically, the path through endorsing revealing the secret as punishment existed above and beyond this indirect effect through endorsing revealing the secret as gossip. Further, the indirect effect of punishment motivation was significantly stronger than the indirect effect through gossip motivation (i.e., the confidence intervals do not overlap). Thus, support for our full model replicated in relation to *confided* secrets from people that participants know in real life, while also accounting for the effect of moral violations being more gossip-worthy.

Anger and Disgust

We again tested mediation through the alternative operationalization of moral outrage. We found that the indirect effect through the anger-and-disgust composite was significant, $Z_{Med} = 4.98$, 95% CI [3.02, 6.94], $p < .0001$. More specifically, when people perceived the confided secret behavior to be more immoral, they reported more anger and disgust, $b = 2.80$, 95% CI [2.71, 2.89], $SE = .05$, $t(1418.23) = 61.30$, $p < .0001$, which in turn, was related to an increased likelihood of them actually having revealed that secret in real life, $B = .05$, $SE = .01$, $OR = 1.05$, 95% CI [1.03, 1.08], $z = 4.01$, $p < .0001$.[7]

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[7] Note that this Study 8 indirect effect replicated for a model with just anger, $ZMed_{indirect\ effect} = 3.24$, 95% CI [1.28, 5.20], $p = .001$, and with just disgust, $ZMed_{indirect\ effect} = 2.11$, 95% CI [.15, 4.07], $p = .04$, in single mediator models.

Figure 6

Serial Model of the Indirect Effects of Moral Judgments on Secret Revealing Through Proposed Mediators (Study 7)
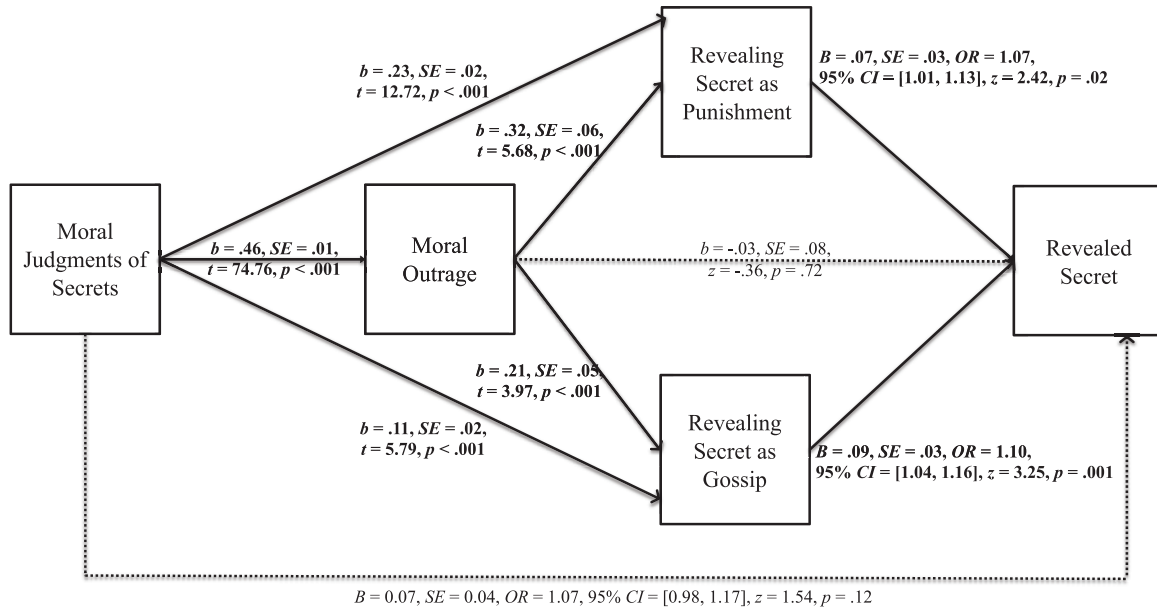
Note. Each reported path (i.e., unstandardized regression coefficient) controls for prior predictors. Thus, the path from moral judgment to revealed the secret represents the direct effect of the independent variable on the dependent variable while controlling for the mediators. Significant paths are denoted by solid lines and bolded coefficients.

Total Effect

The same multilevel binomial modeling strategy from Studies 5–7 did not reveal that perceiving a behavior to be morally wrong, in the abstract, had a total effect on the likelihood that the participant actually revealed someone else's confided secret involving that specific behavior, $B = -.03$, $SE = .02$, $OR = .97$, 95% CI [.93, 1.02], $z = -1.05$, $p = .29$. This is the first study to not demonstrate a significant total effect. Perhaps explaining this lack of a total effect, we also found for the first time a countervailing force. That is, when controlling for the mediators (i.e., the psychological experiences related to increased revelation), moral judgments (in the abstract) had a significant *negative* effect on binary revealing decisions.

Although we did not find this pattern in the other studies, it suggests an intuitive mechanism of influence working against the demonstrated significant indirect effect through moral outrage. When it comes to secrets specifically confided in the participant, to the extent the secret is serious and immoral, participants should be motivated to protect the person who confided in them, and thus more likely to keep the secret—but we must control for positive forces on revelation to see this (see also Study 5). In the realm of confided secrets, perhaps whether the punishment motivation wins out (e.g., Studies 5–6) or not (e.g., Study 8) depends on contextual factors (for a discussion of contextual effects of disclosing one's own secrets, see Cowan, 2020). Either way, we still see increased revelations of real secrets actually confided in the participants as a function of our hypothesized mediators, moral outrage and a corresponding punishment motivation.

In further support, we conducted a pre-registered direct replication of this study, which replicated our findings (pre-registration available at https://osf.io/epmzg/?view_only=59155a8328fc48b69

a9a772885e75b04). We report the methods and results in the online supplemental materials (Study S5).

General Discussion

Everyone has secrets. Keeping personal secrets allows one to maintain one's reputation and avoid punishment for misdeeds, and yet secrets are not always kept. Although people might seek to keep them quiet, others can find out about the secret through many channels: accidentally, told by a third party, or directly confided by the secret keeper. Keeping secrets entirely to oneself is isolating, as well as psychologically and physically unhealthy (Larson & Chastain, 1990; Larson et al., 2015; Quinn & Chaudoir, 2009; Slepian et al., 2017, 2020; Slepian & Koch, 2021). People with a secret must weigh the high-stakes balance between obtaining social support from others against the potentially disastrous consequences from someone (who has no formal obligation to keep the secret and faces far fewer consequences for revealing it) telling others.

Our data serve as a warning flag: one should be aware of a potential confidant's views with regard to the morality of the behavior. Across 14 studies (Studies 1–8; Supplemental Studies S1–S5), we found that people are more likely to reveal other people's secrets to the degree that they, personally, view the secret act as immoral. Emotional reactions to the immoral secrets explained this effect, such as moral outrage as well as anger and disgust, which were associated correlationally and experimentally with revealing the secret as a form of punishment. People were significantly more likely to reveal the same secret if the behavior was done intentionally (vs. unintentionally), if it had gone unpunished

Table 5
Descriptive Statistics for Moral Judgments, Moral Outrage, and Revealing Confided Secrets (Study 8)

Secret type	% (*n*) Were Told the secret	Moral judgments	Moral outrage	Reveal as punishment	Reveal as gossip	% (*n*) Revealed the secret
1. Hurt another person	16% (25)	8.59 (1.42)	4.95 (.98)	5.38 (3.44)	3.89 (3.07)	32% (8)
2. Illegal drug use	72% (109)	5.60 (2.86)	3.30 (1.47)	2.99 (2.62)	2.76 (2.47)	26% (28)
3. Secret habit or addiction (non-drug related)	40% (60)	4.99 (2.21)	2.86 (1.97)	2.62 (2.22)	2.77 (2.44)	13% (8)
4. Theft	66% (101)	8.13 (1.92)	4.59 (1.23)	4.22 (2.93)	3.53 (2.73)	26% (26)
5. Illegal activity	52% (79)	6.99 (2.16)	4.11 (1.11)	3.72 (2.72)	2.91 (2.29)	23% (18)
6. Physical self-harm	57% (86)	6.30 (2.54)	3.26 (1.53)	2.53 (2.75)	2.45 (2.46)	30% (26)
7. Had an abortion	41% (63)	3.82 (3.38)	2.35 (1.72)	2.07 (2.17)	1.75 (1.80)	16% (10)
8. Lied to someone	84% (128)	5.98 (2.35)	3.57 (1.18)	3.47 (2.65)	3.74 (2.74)	31% (40)
9. Had romantic desires while single	86% (130)	1.59 (1.61)	1.35 (.86)	2.37 (2.52)	3.57 (3.20)	30% (39)
10. Unhappy in a relationship	82% (124)	2.34 (2.29)	1.78 (1.19)	2.14 (2.10)	2.91 (2.58)	30% (37)
11. Extrarelational romantic thoughts	59% (90)	6.58 (3.05)	3.84 (1.66)	3.10 (2.89)	2.62 (2.32)	28% (25)
12. Emotional infidelity	42% (64)	7.23 (2.36)	4.27 (1.34)	3.85 (3.04)	3.13 (2.71)	27% (17)
13. Sexual infidelity	47% (71)	8.60 (1.98)	5.02 (1.12)	4.46 (3.26)	3.35 (2.90)	30% (21)
14. Was the "other man/woman"	45% (68)	7.65 (2.28)	4.50 (1.30)	4.28 (3.22)	3.61 (2.93)	31% (21)
15. Mental health issues	86% (131)	1.53 (1.62)	1.29 (.89)	1.95 (2.30)	2.12 (2.35)	18% (24)
16. Cheated at work/school	68% (103)	6.73 (2.15)	3.88 (1.30)	4.01 (3.07)	3.44 (2.74)	18% (19)
17. Lied to get a job/into school	38% (58)	6.64 (2.33)	3.98 (1.36)	4.10 (2.95)	3.59 (2.77)	19% (11)
18. Performed poorly at work (or school)	63% (96)	3.10 (2.22)	1.98 (1.06)	2.66 (2.62)	2.98 (2.54)	27% (26)
19. Work discontent	82% (125)	1.93 (1.99)	1.56 (1.05)	2.48 (2.58)	3.63 (3.06)	31% (39)
20. Planning a surprise for someone	87% (132)	1.39 (1.30)	1.19 (.56)	2.47 (2.70)	3.83 (3.28)	24% (32)

Note. Moral judgments were assessed from 1 (*Perfectly Ok*) to 10 (*Extremely Wrong*). Moral Outrage was assessed from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*). Revealing the Secret as Punishment and Gossip were assessed from 1 (*Perfectly Ok*) to 10 (*Extremely Wrong*) and were reverse scored. The percentage who learned the secret is relative to the full sample, and the percentage who revealed the secret is relative to only those who had learned the secret. The secret names have been abbreviated; for full descriptions see Table S2 in the online supplemental materials.

(vs. already punished by someone else), and in the context of a moral framing (vs. no moral framing). These experiments suggest a causal role for both the degree to which the secret behavior is immoral and the participants' desire to see the behavior punished. Additionally, we found that this psychological process did not generalize to non-secret information. Although people were more likely to reveal both secret and non-secret information when they perceived it to be more immoral, they did so for different reasons: as an appropriate punishment for the immoral secrets, and as interesting fodder for gossip for the immoral non-secrets.

This was demonstrated across a diverse set of secrets, circumstances, and targets. This psychological motivation to reveal immoral secrets as punishment generalized to secrets learned in diverse ways, including being confided in—in both hypothetical experiments and with real-world secrets. The current studies represent the first investigation into when and why people support revealing the secrets of real-world strangers (Studies 2a–2b), hypothetical scenarios asking them to envision someone they know without specifying who (Studies 1, 3–4), hypothetical scenarios about secrets confided by specific known others who confided in them (Study 5–6), and—perhaps most strikingly—actual decisions about revealing real secrets held by people they know in their lives (Study 7), including secrets directly confided in them (Study 8). By modeling the content of the secrets as a random category (Studies 3–8), we can conceptually generalize the current results to the larger universe of unsampled secrets, just as researchers seek to generalize their results beyond unsampled participants (Judd et al., 2012). The robustness of our findings is further reinforced by the fact that we have reported every study that we have run on this topic; no file drawer results exist.

Although not the primary focus, Studies 7–8 provide an interesting first glimpse into what kinds of secrets people more frequently reveal to others. More than half of our participants learned of someone keeping not just one of the commonly kept secrets, but nearly all of them. People tended to reveal 26% (Study 8) to 30% (Study 7) of other people's secrets. Although this means that a majority of secrets were kept and protected, a meaningful portion—a percentage that some might see as horrifying—are revealed to others.

Across the different categories of secrets, we observed meaningful variation. On the low end, people revealed approximately 18% to 27% of secrets about someone committing emotional infidelity or planning a surprise, which suggests a variety of potential motivating factors that might lead people to protect others' secrets (e.g., the secret being a positive thing, thinking it is too personal and big to reveal without permission, thinking it is too inconsequential to mention, etc.). On the higher end, people revealed secrets at almost a coin-flip (approximately 30% to 46%) when they were about hurting someone, lying to someone, and physical self-harm, which also suggest a variety of potential motivating factors that lead people to reveal others' secrets (e.g., to get help for the person, to prevent harm to a third party). Despite the myriad circumstances and motivations that might factor into the decision to reveal someone's secret across diverse contexts, we found a consistent signal through this noise: People were more likely to reveal others' secrets when they violated their own values because they wanted to punish the secret keeper—not only strangers and in hypothetical scenarios, but even when the secrets were confided in them by people in their lives with real-life consequences.

Although we observed interesting variation across the categories of secrets, across our distinct contexts, the likelihood of revelation was similar. Our Study 8 participants learned (*n* = 1,843) and revealed (18% to 46% of specific secrets, 26% of all secrets overall) confided secrets at similar rates as secrets learned through nonspecified channels (Study 7: *n* = 2,064, 18% to 46% specific secrets revealed, 30% of all secrets revealed). Further, the hypothesized psychological process (i.e.,

Figure 7
Serial Model of the Indirect Effects of Moral Judgments on Secret Revealing Through Proposed Mediators (Study 8)
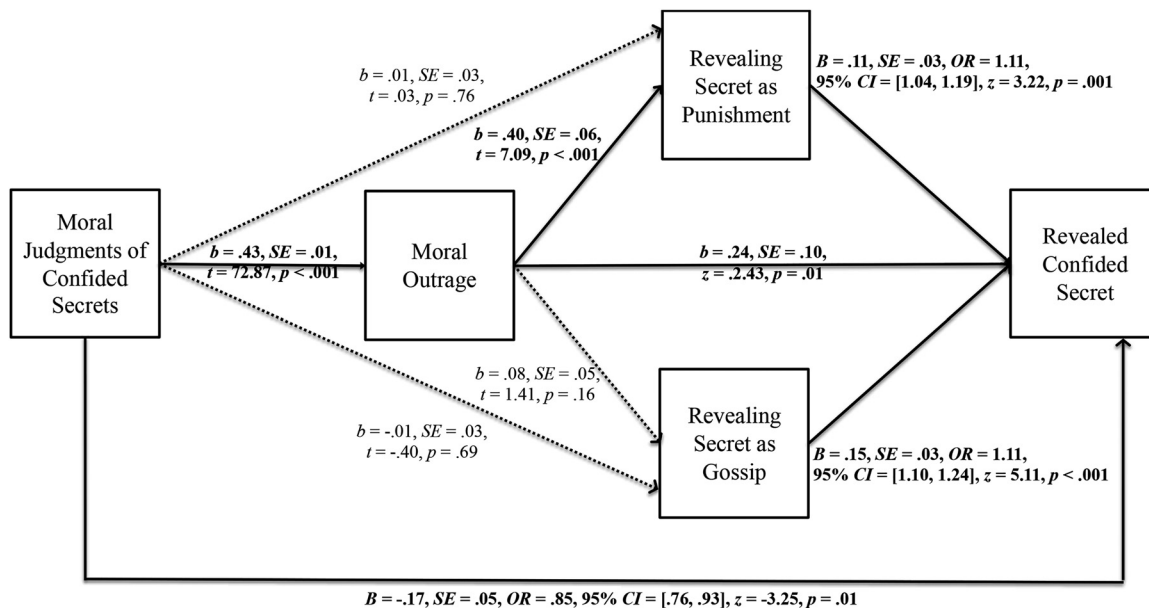
Note. Each reported path (i.e., unstandardized regression coefficient) controls for prior predictors. Thus, the path from moral judgment to revealed the secret represents the direct effect of the independent variable on the dependent variable while controlling for the mediators. Significant paths are denoted by solid lines and bolded coefficients.

indirect effect) was significant in the hypothetical confided secrets experiments (Study 5–6) and in the real confided secrets paradigm (Study 8), as well as direct replications of both (Supplemental Studies S2, S5). More specifically, we found evidence in all studies that—even when the secrets had been entrusted to someone via direct confiding—there is still evidence that when those secrets are perceived as immoral, participants are more likely to reveal those secrets to others as punishment through those secrets eliciting feelings of moral outrage.

Implications for Disclosure and Confiding Secrets

The small (but growing) literature on secrecy investigates the decision to keep or disclose one's *own* secrets to others (Slepian, 2021), but has yet to investigate the other side of the coin. Specifically, prior work has yet to address when those disclosed secrets are kept or betrayed. Studies about the revelation of one's own secrets have demonstrated that people tend to confide in those who are nonjudgmental (Slepian & Kirby, 2018). Our studies suggest a critical refinement to this idea. Rather than searching for generally nonjudgmental people, a secret keeper might want to make sure that the specific secret behavior does not violate the potential confidant's moral values.

It is well-established and intuitive that people keep their *own* secrets to avoid judgment, damage to their reputation or relationships, punishment from others, and hurting other people (Afifi & Steuber, 2010; Caughlin et al., 2005; Larson et al., 2015; McDonald et al., 2020; Slepian & Bastian, 2017). And yet, we do not consistently lend the same privilege to others. Given that (a) people who are confided in generally feel intimacy with the person who shared the secret (Slepian & Greenaway, 2018), (b) people value privacy, loyalty, and avoiding harm (Haidt, 2007), and (c) people are willing to carry their own secret

burdens (Liu & Slepian, 2018; Slepian et al., 2016), it would be reasonable to assume that the psychological mechanism underlying the decision to reveal one's own secrets might be similar to the decision to reveal other people's secrets. That is, people might assume that other people will keep their secrets that they confided in them for similar reasons: to avoid hurting the secret keeper and others, to protect their privacy, to be loyal. The current studies, however, reveal that this mechanism might work in the opposite direction for the decision to reveal *others'* secrets. People reveal others' secrets *to* punish them when they have done something that violates their own morals. Even when we investigated secrets directly confided in the participant, we found that they were more likely to reveal hypothetical secrets that had not yet been punished compared with secrets that had already been punished (Study 5) and real confided secrets that they perceived to be relatively more immoral (Study 8) because they elicited feelings of moral outrage. Thus, we cannot assume that theories of self-disclosure will translate to disclosing others' secrets (see Yovetich & Drigotas, 1999). Not only does this illuminate self-other differences in the psychological processes of secrecy but has important implications for how to choose a confidant.

Implications for Moral Judgment and Punishment

Our studies demonstrate (consistent with previous research) that people feel moral outrage and a desire to punish hypothetical or stranger targets when they violate the participant's morals (e.g., Sawaoka & Monin, 2018). We extend this to a new context: revealing others' secrets—even people in their own lives. Moving beyond hypotheticals, we also document that being confided in by a known other is more complicated. Despite loyalty to known others, much

more mitigating information, and a deeper understanding of and potentially affectionate bonds toward people in our lives who have done something wrong, the present studies uniquely reveal that we are still motivated to punish them by revealing their immoral secrets.

If we reveal the secrets of people we know, we may be likely to witness the harm that revealing the secret will cause to the secret keeper, our relationship with the secret keeper, and potentially third parties as collateral damage—each of which third-party punishers in previous experiments involving hypotheticals or strangers did not have to deal with. Based on previous studies demonstrating a greater desire to protect people we are close to when they have committed wrongdoing (Waytz et al., 2013; Weidman et al., 2020), one might expect that people would respond with less intense moral outrage to secret moral violations committed by people they know—especially if the secret had been confided in them directly. Yet, we found that the impact of moral violations on revealing secrets as punishment was driven, at least in part, by a moral emotion-fueled retributive impulse—even when they knew the secret keeper. Additionally, it appears that this punishment motivation was a reaction to the immoral behavior being kept secret as revelation decisions for immoral non-secrets were not driven by a punishment motivation (but rather motivated by gossip and interest; Study 6).

Although people are perhaps willing to protect people they know from authorities by not officially reporting them, they can still punish them for violating their morals by telling other people about their transgression and letting them suffer the consequences through more informal social network processes instead of formal and legal procedures.

Relation to Gossip Literature

We found that participants decisions to reveal immoral secrets were driven by the desire to punish, whereas decisions to reveal immoral *non-secrets* (about the same behaviors) were driven by finding the behavior interesting and worthy of gossip (Study 6). Hence, we empirically differentiate our present findings from prior work on gossip. Indeed, the focus and scope of the gossip literature is quite broad; it does not focus on *secret* information specifically and is instead defined broadly as talking judgmentally or evaluatively about a person who is absent (e.g., Feinberg, Cheng, et al., 2012; Feinberg, Willer, et al., 2012; Fernandes et al., 2017; Wu et al., 2016). Methodologically, these gossip studies have been relatively limited to decisions to spread public, not secret, information about someone unknown to the participant. And indeed, only when we examined non-secrets did gossip motivation become more prominent; when the context was secrets, in contrast, a punishment motivation became more prominent.

Although the two constructs can overlap (i.e., when the gossip is about secret information), our work reveals that revealing an immoral secret is not motivated in the same way as gossiping about immoral non-secrets. Beyond demonstrating these different pathways to revelation of others' immoral behaviors, we also demonstrated in several studies (Studies 5–8; Supplemental Studies S2, S5), that the desire to punish the secret keeper explained their decision to reveal the secret, above and beyond their endorsement of gossiping about the secret. We believe that the two literatures complement each other, and suggest future research directions, which we turn to next.

Limitations and Future Directions

Many factors are likely to predict revealing others' secrets, such as how close one is to the secret keeper, one's level of concern, the need to talk about the secret, how much of a gossip someone is, or how "good" one is at keeping secrets. These are fruitful areas for future research. Despite these factors and more contributing noise, the predicted effect operating through moral outrage and the motivation to punish immoral secrets emerged on actual revelations and was highly reliable across studies.

For a first inquiry on the revelation of others' secrets, we drew upon the morality, justice, and punishment literatures. Future work could explore additional reasons for revealing others' secrets, such as in attempts to bond with others (reminiscent of the gossip literature) or forgetting who knows what (reminiscent of the source memory literature). Future work could also examine how features of the relationship determine whether a secret is revealed (e.g., the extent to which one's social network overlaps with the secret keeper's) or features of who they pass the secret on to (i.e., the degree to which the revelation target is related to the situation).

We established that the motivation to reveal secrets is, at least in part, grounded in a desire to punish, but future work could further establish this effect in other ways (e.g., testing whether people are more likely to reveal a secret to those who could punish the secret keeper vs. someone who could not) or could examine other benefits of revealing the secret, such as a sense that justice has been restored (see, Okimoto & Wenzel, 2009; Wenzel et al., 2008). It is also possible that people would not reveal the immoral secrets as frequently if they had another way to punish, which could also be tested in future work.

Our samples were drawn from diverse ages and diverse regions throughout the United States. This diversity of participants is better than that of a college student sample but still has limitations of its own. Participants were predominantly recruited from Mechanical Turk. Importantly, prior work has demonstrated that participants from this population demonstrate similar patterns of, and experience with, secrecy compared with other samples that have greater diversity (Slepian et al., 2017). Additionally, participants recruited on this platform who take part in a study on secrecy do not differ on relevant variables (e.g., subjective well-being) from participants on this platform who do not participate in a study on secrecy (Slepian, Greenaway, & Masicampo, 2020). Importantly, Studies 5 and 8, as well as their direct replications (Supplemental Studies S2 and S4), did recruit participants from another platform, Academic Prolific. Thus, we observed similar results when sampling from two different participant populations.

It is likely that culture would moderate the present results, and thus future work would benefit from exploring these effects through a cultural lens. For example, cultural differences in attitudes toward punishment (e.g., Eriksson et al., 2017; Feinberg et al., 2019; Zhang et al., 2017) as well as norms surrounding telling other people's secrets would likely moderate the present results. Recruiting more inclusive samples (e.g., across culture, race, ethnicity) would also help test whether these results generalize beyond participants living the United States who were largely White.

It is worth noting that we measured moral outrage, rather than seeking to manipulate it outside of the presence of a moral violation. Hence, from the current data, we cannot claim the mediator causally influenced our dependent measure. Such a causal link does make theoretical sense, however, as suggested by prior work (Darley & Pittman, 2003; Olatunji & Puncochar, 2014). Also, in the current work, our direct manipulations of moral violations (Study 4) and punishment motivation (Study 5; Supplemental Study S2) support causal effect arguments.

The current studies were limited by the difficulties inherent to studying secrecy, such as our inability to experimentally create novel secrets

in the laboratory that are significant enough to be meaningful and have real consequences (which participants then could choose to reveal or not). Such a method unfortunately poses ethical quandaries along with ecological validity concerns, and so when it comes to studying real-world secrets, measurement is more appropriate (see Slepian, 2021; Slepian et al., 2017, 2020). We did, however, experimentally manipulate whether information was a secret or not within hypothetical scenarios, which did confirm different motivations behind revealing immoral secrets (i.e., punishment) versus immoral non-secrets (i.e., gossip).

Several experiments (Studies 1, 3–6; Supplemental Study S2) established causal relationships with hypothetical secrets, which come with reduced ecological validity. Studies 2a and 2b gained ecological validity by assessing opinions about detailed real scenarios in the news, but relied on self-reported behavioral intentions, which can be unreliable and were far removed from everyday life experiences. Studies 7–8 (and Supplemental Studies S3–S5) examined real secrets, and relied on retrospective accounts of actual behavior surrounding real secrets, which brings the benefit of ecological validity and actual behavioral measures. Although retrospection is not perfect, we think it is unlikely that people would recall having learned someone's secret, but not accurately remember whether they revealed that secret. The benefit of these final studies, then, is studying the real phenomenon of interest: people actually revealing others' secrets after establishing causal effects in hypothetical scenarios. Although each study is missing one piece (ecological validity in the experiments, measured real-world behavior in Studies 1–6, or experimental control in Studies 2a and 2b and 7–8), the studies as a whole address these concerns and converge on our conclusions (and we report every study conducted on this topic). Further, there was a meaningful level of consistency in revelation rates overall across hypothetical (Study 1: 24%) and real-world (Studies 7–8: 26% to 30%) secrets.

Future work would benefit from alternative study designs. Experimentally inducing participants to (even, if seemingly) discover known others' actual secrets would be ideal but presents ethical concerns. Future work might also benefit from obtaining time-lagged measures of these outcomes. Although Studies 7 and 8 ensured that participants made moral judgments before knowing the study was about secrets (i.e., making it highly improbable they were thinking of a time when they learned or revealed a relevant secret in real life when making general morality judgments), still, we could not avoid measuring moral judgments after the real-world event. Diary studies might be useful if able to catch people often enough, both before and after they learn a secret.

Conclusion

Across diverse circumstances and methods, we find that the perceived morality of another's secret behavior predicts revealing that secret to a third party. A consistent psychological mechanism emerged: When someone does something that people think is morally wrong, the associated moral outrage motivates them to punish the person by revealing the secret. This motivation explained the likelihood of revealing others' secrets across diverse targets (hypothetical people, strangers, people who participants know personally) and across diverse topics, the revelation of which could bring disastrous consequences. Before confiding in another person, it would be wise to make sure that your moral codes align.

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Appendix A

Study 1 Vignette

Imagine that you are walking into work one day and you walk by a coworker, who you also think of as a friend. You have known this person for a few years and consider the person to be a casual friend. You are also friends with this person's spouse. You and your spouse have spent time with this couple socially on occasion.

While walking by you happen to overhear the friend discussing a personal and sensitive issue. Your friend spots you and approaches you later in the day. Your friend discloses the secret to you and asks that you not tell anyone. Your friend admits that, out of concern for protecting their spouse, your friend has not told their spouse about the secret. Your friend also asks that you keep the secret even from your own spouse out of fear that your spouse might disclose the secret to someone. The secret is relatively significant and is something that would impact your friend's spouse's life.

Your friend expresses remorse and promises that the secret has been taken care of and is no longer an issue. Your friend reiterates that they are keeping the secret only because they do not want to worry their spouse and make their life unnecessarily stressful.

Immoral Secret Condition

The secret is about something that you consider to be immoral and wrong. That is, the secret is both relatively significant and immoral.

Morally Neutral Condition

The secret is about something you do NOT consider to be immoral or wrong. That is, although the secret is relatively significant, it is NOT something that you consider to be morally wrong.

Your friend's spouse said that they are worried something is wrong. You could reveal the secret to any number of people. You might reveal the secret to only your spouse, you might reveal the secret to your friend's spouse who seems worried, or you might reveal the secret to someone else who is unrelated to the situation (e.g., to get it off your chest, for advice on what to do, etc.).

(Appendices continue)

Appendix B

Anger and Disgust Measure (Studies 2a and 2b)

Please use this grid to indicate how angry and disgusted you feel about [the people who use the Ashley Madison site to commit adultery/clinic patients who decided to get an abortion]. These people's actions can make you feel high in both, low in both, or high in one and not the other.

Along the *bottom* of the grid is how *disgusted* you feel about the [Ashley Madison site users' actions/clinic patients' decision to get an abortion], with low disgust on the left through high disgust on the right.

Along the *left side* of the grid represents how *angry* you feel about the [Ashley Madison site users'/clinic patients' decision to get an abortion], from low anger on the bottom to high anger at the top.

Please enter the number of the box that best matches with your level of disgust and anger about the [Ashley Madison site users' actions / clinic patients' decision to get an abortion].

ANGER		Not at all Disgusted	Somewhat Disgusted	Disgusted	Very Disgusted	Extremely Disgusted
	Extremely Angry	5-1	5-2	5-3	5-4	5-5
	Very Angry	4-1	4-2	4-3	4-4	4-5
	Angry	3-1	3-2	3-3	3-4	3-5
	Somewhat Angry	2-1	2-2	2-3	2-4	2-5
	Not at all Angry	1-1	1-2	1-3	1-4	1-5

DISGUST

Appendix C

Study 4 Morality Manipulation and Vignettes

Secret type	Unintentional	Intentional
Hurt another person emotionally	Mallory was angry with her boyfriend, Mark. She knew that she was being unfair, so rather than say something hurtful to his face, she decided to vent in her journal, and then take a bath to calm down. While she was in the bath, Mark came home early and saw the hurtful things she wrote in the journal that she had accidentally left out.	Mallory was angry with her boyfriend, Mark. She wanted him to feel as hurt as she did. She decided to vent in her journal and purposely left her journal open where Mark would find it. She knew Mark would be home soon, so she left it out, and got in the bath. Mark came home and saw the hurtful things she wrote in the journal.
Used illegal drugs	Ross went to a party and, and although he had decided beforehand, he would not take any illegal party drugs, a friend offered him some, and in the heat of the moment, he said yes.	Ross brought illegal party drugs to a party, which he then took when he got there.
Was addicted to a legal drug (e.g., alcohol, painkillers)	Stephanie expressed concern to her doctor about the potential addictiveness of pain killers he was prescribing, but she was reassured the dosage was fine. Stephanie became addicted to pain killers as a result.	After Stephanie's pain for from her injury subsided, she continued to take pain killers that she had been prescribed even though they weren't needed. Stephanie became addicted to pain killers as a result.
Stolen something from someone or some place	Katie accidentally stole an expensive piece of jewelry from a department store. She didn't realize her child had put it in the pocket of her jacket but kept it.	Katie stole an expensive piece of jewelry from a department store. When trying on the jewelry, she noticed the department store worker was distracted, and so she just walked away with the jewelry, and kept it.
Engaged in something illegal (other than drugs or stealing)	When he was 18, Kevin was sexually involved with a 14-year-old who he believed was 18. She said she was 18, and she looked much older than she was.	When he was 18, Kevin was sexually involved with a 14-year-old who he knew was underage.

(*Appendices continue*)

Appendix C (*Continued*)

Secret type	Unintentional	Intentional
Physically harmed themselves	John accidentally gave himself a deep cut on his arm by accidentally mishandling a knife while chopping vegetables.	John gave himself a deep cut on his arm because he found it helped him deal with his emotional pain.
Hurt another person physically	Ben and Emily were in a heated argument. At one point, Emily turned quickly to respond to something Ben said and didn't realize he was right behind her. She ended up accidentally hitting him in the face as she turned.	Ben and Emily were in a heated argument. At one point Emily turned quickly to respond to something Ben said that made her incredibly angry. Out of anger, she turned and hit him in the face.
Have lied to someone.	While shopping, Jackie bought a dress she really wanted, but knew it was way too expensive. When her husband asked about the dress, instead of telling him the true price as she had planned to, she got flustered, and ended up saying it was on sale, even though that wasn't the case.	While shopping, Jackie bought a dress she really wanted, but knew it was way too expensive. While contemplating if she should buy it, she decided she would tell her husband that it was on sale. When he asked about the dress, she lied and said it was on sale, even though that wasn't the case.
Had romantic desires about someone while being single (e.g., a crush, in love with someone, wanting relations with a specific person)	Eric has a crush on his boss, Lisa. Eric knows that she is married, and so of course nothing can ever happen. But despite his best efforts, fantasies about her keep popping into his head. Despite his best efforts to control it, he keeps imagining what his boss would look like naked.	Eric has a crush on his boss, Lisa. Eric knows that she is married, and so of course nothing can ever happen. Even though Eric knows his boss is married, he often fantasizes about her. He enjoys imagining what his boss would look like naked.
Is/was unhappy in a romantic relationship	Stacey thought it would be a good exercise to think about what was going well in her relationship with Matt. Despite trying to be positive, this unintentionally made her feel worse about the relationship because she could not think of many positive things. As a result, she now thinks the relationship is in trouble and that she is unhappy.	Stacey thought it was important to think about what was not going well in her relationship with Matt. This made her realize all the ways she is not happy. As a result, she now thinks the relationship is in trouble and that she is unhappy.
Thought about having relations with another person (while already in a relationship)	While daydreaming, Chris who is married, thought about what it would be like to be in a relationship (emotional and physical) with his good friend Lauren. Chris is happily married. It is not a thought he deliberately wanted. It just randomly popped in his head.	While chatting with his good friend Lauren, Chris who is married to someone else, thought about what it would be like to be in a relationship (emotional and physical) with Lauren. Chris is happily married. He can't pinpoint why he likes to imagine this, but he deliberately does so every now and then.
Committed emotional infidelity that did NOT involve actual sexual infidelity (e.g., having an inappropriate emotional connection with someone, or engaging in something other than sex, such as flirting, kissing, etc.)	Kim is currently in a committed relationship but has recently been supporting one of her coworkers through a tragedy. As a result, she now feels a stronger connection to him, almost as if their connection were flirty, and so she has been trying to avoid the coworker, but despite her best efforts, she feels like she is becoming more emotionally close to him.	Kim is currently in a committed relationship, but she really loves to flirt with other men and grow emotionally close to them. She has been recently becoming especially emotionally close with one of her coworkers.
Committed sexual infidelity (engaged in sexual relations with someone who was not your partner)	Evan is married but has become closer and closer to another woman. He is happily married, but after getting extremely drunk at a party, he felt almost like he wasn't in control over his own body, and in the heat of the moment, he committed infidelity and had sex with this other woman.	Evan is married but has become closer and closer to another woman. He is happily married, but after carefully planning it for a while, he committed infidelity and had sex with this other woman.
Was the other man/woman by being in a relationship with someone else who themselves actually had a partner (that is, someone was cheating on their partner with the person you know personally)	Chelsea has not been seeing anyone romantically but has recently began a relationship with a man who is married. She knows that she should not be in a relationship with a married man. She never intended for the relationship to begin in the first place for this reason, but despite trying her hardest to stop the affair from continuing, it seems to still linger on.	Chelsea has not been seeing anyone romantically but has recently began a relationship with a man who is married. She knows that she should not be in a relationship with a married man, but she has strong feelings for this person, and often spends time and effort to arrange opportunities to be alone with him to make sure the affair continues.
Had mental health issues (for example, fears, anxieties, depression, mental disorders, eating disorders)	Sandra has been training extensively for her upcoming marathon, not only improving her times but even seeking to lose weight so that	Sandra has been deliberately skipping meals, eating lightly, and a few times even exhibiting bulimia-like purging behaviors. She

(*Appendices continue*)

Appendix C (*Continued*)

Secret type	Unintentional	Intentional
	she has less weight to carry in the race. While her intention was only to improve her health, as side effect of this training, she has begun unhealthy habits too. She never meant for it to go this far, but now she finds herself skipping meals, eating lightly, and a few times even exhibiting bulimia-like purging behaviors.	knows this is harmful to her health but likes the way she looks with her newfound weight loss.
Cheated or did something improper at work (or school), or having lied to get a job (or into a school)	Mark was caught in violation of academic integrity when the language he used in an assignment too closely matched another article. It turns out that he failed to paraphrase and reword from the original source as much as he thought he thought he did.	Mark was caught in violation of academic integrity when he blatantly plagiarized an article for an assignment he handed in for one of his college courses. He copied and pasted large sections of the article into his assignment.
Performing poorly at work (or school)	Rebecca took an SAT-prep course that her parents had paid for but did very poorly on the SAT even though she always studied as hard as she could every week.	Rebecca took a SAT-prep course that her parents had paid for but did very poorly on the SAT because she decided she didn't feel like studying.
Lied to get a job	Peter got an amazing job offer out of college. The interviewer was excited by his application, but actually got his applicants confused. He offered Peter a job, thinking he had won some prestigious award in college, but this was a detail from another applicant.	Peter got an amazing job offer out of college. He claimed to have won a prestigious award in college, but this was actually a lie that he mentioned in the interview to increase his chances.
Violated someone's trust (but NOT by a lie, infidelity, or any of the secrets already listed). For example, by snooping, breaking or losing something that belongs to someone without telling them, etc.	Brian noticed his girlfriend's laptop open on her email, and knowing she keeps an email draft of a wish list, he searched her email for potential gift ideas. Somehow in searching for this, to generate gift ideas, he found an email she had sent to her ex. He did not mean to snoop but found himself reading that email.	Brian has been suspicious that his girlfriend has been in contact with her ex, and when he noticed her laptop open on her email, he searched her emails, and read an email she had sent to her ex.
Was planning a surprise for someone	Kathy surprised her husband with expensive opera tickets they could never afford, after her friend couldn't use hers. She actually hadn't meant for it to be a surprise but had forgotten to put it on their shared calendar, and as a result had not thought to mention it before the day of the opera.	Kathy surprised her husband with expensive opera tickets they could never afford, after her friend couldn't use hers. She kept this a surprise for months.

Appendix D

Unpunished Versus Punished Versions of Immoral Secrets (Study 5)

Secret type	Unpunished	Punished
Illegal drugs at work	Your coworker, who works as a caretaker for a special needs child, told you that he was using illegal drugs at work. Although nothing bad happened, his supervisor found out. His supervisor privately questioned him about it but decided to only give him a warning.	Your coworker, who works as a caretaker for a special needs child, told you that he was using illegal drugs at work. Although nothing bad happened, his supervisor found out. His supervisor privately questioned him about it and told him that this was definitely going to prevent him from getting the promotion that he had been a top candidate for.
Theft	A friend told you that she stole an expensive piece of jewelry from a department store and got caught. However, the store had to let her go because they were not allowed to search her. She was excited to have gotten away with it.	A friend told you that she stole an expensive piece of jewelry from a department store and got caught. She was embarrassed to be confronted publicly. Although she had to give the jewelry back and had to pay a hefty fine—she was happy that no one else in her life had found out about it.
Sexual infidelity	One of your married friends told you that he committed infidelity and had sex with someone and his spouse found out. He	One of your married friends told you that he committed infidelity and had sex with someone else and his spouse found out.

(*Appendices continue*)

Appendix D (*Continued*)

Secret type	Unpunished	Punished
	was relieved that despite how upset she was, she decided to stay with him and agreed not to tell anyone else about his infidelity.	She was very upset and decided to end their relationship but agreed not to tell anyone else about his infidelity.
Academic cheating	A friend of yours who was working toward a graduate degree told you that he blatantly plagiarized a paper for a class assignment. He stole his friend's paper from a previous semester (without him knowing it) and copied and pasted entire sections of it into his own assignment without even rewording them. His professor emailed him privately but decided to just give him a warning.	A friend of yours who was working toward a graduate degree told you that he blatantly plagiarized a paper for a class assignment. He stole his friend's paper from a previous semester (without him knowing it) and copied and pasted entire sections of it into his own assignment without even rewording them. His professor emailed him privately, and said he was going to fail the entire course as a result and would have to repeat the class but would not report his behavior to anyone else.
Lying on a resume to get a job	Your cousin told you that she lied on her resume by adding several additional jobs and awards, and also forged a letter of recommendation from a famous professor. She ended up getting her dream job over others who were much more qualified. A few months later a coworker found out that she had lied but decided not to tell their boss or anyone else because she was doing a great job.	Your cousin told you that she lied on her resume by adding several additional jobs and awards, and also forged a letter of recommendation from a famous professor. A few months later a coworker found out that she had lied and reported her to their boss who severely reprimanded her.

Appendix E

Non-secret Versus Secret Versions of Immoral Secrets (Study 6)

Secret type	Non-secret	Secret
Illegal drugs at work	Your coworker, who works as a caretaker for a special needs child, told you that he was using illegal drugs at work. Although nothing bad happened, his supervisor found out. His supervisor privately questioned him about it but decided to only give him a warning. The entire office found out what happened.	Your coworker, who works as a caretaker for a special needs child, told you that he was using illegal drugs at work. Although nothing bad happened, his supervisor found out. His supervisor privately questioned him about it but decided to only give him a warning and agreed to not tell his colleagues.
Theft	A friend told you that she stole an expensive piece of jewelry from a department store and got caught. However, the store had to let her go because they were not allowed to search her. She was excited to have gotten away with it and said that she was totally fine with other people finding out about it.	A friend told you that she stole an expensive piece of jewelry from a department store and got caught. However, the store had to let her go because they were not allowed to search her. She was excited to have gotten away with it and said that she didn't want other people to find out about it.
Sexual infidelity	One of your married friends told you that he committed infidelity and had sex with someone and his spouse found out. He was relieved that despite how upset she was, she decided to stay with him, but as a couple they decided that they would not keep what happened a secret from others.	One of your married friends told you that he committed infidelity and had sex with someone and his spouse found out. He was relieved that despite how upset she was, she decided to stay with him and agreed not to tell anyone else about his infidelity.
Academic cheating	A friend of yours who was working toward a graduate degree told you that he blatantly plagiarized a paper for a class assignment. He stole his friend's paper from a previous semester (without him knowing it) and copied and pasted entire sections of it into his own assignment without even rewording them. His professor emailed him privately but decided to just give him a warning. He said that he didn't care if people heard about it.	A friend of yours who was working toward a graduate degree told you that he blatantly plagiarized a paper for a class assignment. He stole his friend's paper from a previous semester (without him knowing it) and copied and pasted entire sections of it into his own assignment without even rewording them. His professor emailed him privately but decided to just give him a warning. He said he didn't plan on telling anyone else.
Lying on a resume to get a job	Your cousin told you that she lied on her resume by adding several additional jobs and awards, and also forged a letter of recommendation from a famous professor. She ended up getting her dream job over others who were much more	Your cousin told you that she lied on her resume by adding several additional jobs and awards, and also forged a letter of recommendation from a famous professor. She ended up getting her dream job over others who were much more qualified. A few months later a coworker found out that she

(Appendices continue)

Appendix E (*Continued*)

Secret type	Non-secret	Secret
	qualified. A few months later a coworker found out that she had lied and told everyone in the office.	had lied but decided not to tell their boss or anyone else because she was doing a great job.
Abortion	Your cousin told you that she had had a drunken night a few months ago and had gotten pregnant by someone she had just met that night. She decided to get an abortion. She said that she knows that abortion can be stigmatized because people don't talk about it, so she doesn't want to hide it from anyone.	Your cousin told you that she had had a drunken night a few months ago and had gotten pregnant by someone she had just met that night. She decided to get an abortion. She said that she knows that abortion can be stigmatized, and so she wanted to make sure that nobody else found out.
Addiction	A friend of yours told you that after her back injury, the pain for from her injury subsided—but she continued to take pain killers that she had been prescribed even though they weren't needed. She admitted that she had become addicted to pain killers as a result. She said that people are judgmental because they don't realize how many people have addictions, so she did not plan on keeping it a secret.	A friend of yours told you that after her back injury, the pain for from her injury subsided—but she continued to take pain killers that she had been prescribed even though they weren't needed. She admitted that she had become addicted to pain killers as a result. She said she planned on keeping it a secret to avoid being judged.