

**The Benefits of a Right to Silence for the Innocent**

**Shmuel Leshem**

**USC Center in Law, Economics and Organization**

**Research Paper No. C11-19**

**USC Legal Studies Research Paper No. 11-26**



**CENTER IN LAW, ECONOMICS  
AND ORGANIZATION  
RESEARCH PAPER SERIES and LEGAL  
STUDIES RESEARCH PAPER SERIES**

University of Southern California Law School  
Los Angeles, CA 90089-0071

# The Benefits of a Right to Silence for the Innocent\*

Shmuel Leshem<sup>†</sup>

October 27, 2009

## Abstract

This article shows that innocent suspects benefit from exercising their right to silence during criminal proceedings. We present a model in which a criminal suspect can either make a statement or remain silent during police interrogation. At trial, the jury observes informative but imperfect signals about the suspect's guilt and the truthfulness of the suspect's statement. We show that a right to silence benefits innocent suspects by providing them with a safer alternative to speech, as well as by reducing the probability of wrongful conviction for suspects who remain silent with and without a right to silence.

---

\*For very useful comments and suggestions, I am grateful to the Editor, Jennifer Reinganum, two anonymous referees, Mat McCubbins, and Daniel Seidmann. I also thank seminar participants at the American Law and Economics Annual meeting (2008), Tel Aviv University School of Law (2008), Marshall School of Business (2008), and the University of Southern California Economics Department (2009).

<sup>†</sup>University of Southern California; sleshem@law.usc.edu.

" ... the privilege [against self-incrimination], while sometimes a 'shelter to the guilty,' is often 'a protection to the innocent.'"

*Murphy v. Waterfront Commission* (1964)

## 1 Introduction

The Fifth Amendment's privilege against compelled self-incrimination provides criminal suspects with a right to silence. The right to silence prohibits a jury from drawing an adverse inference from a suspect's decision to remain silent in the face of questioning: if a suspect in a crime refuses to answer police questions, the jury must not consider the suspect's silence as evidence of guilt. Rather, the jury must reach its verdict based only on the other evidence presented at trial.<sup>1</sup> The right to silence is often described as one of the fundamental principles of criminal proceedings. For example, the Supreme Court in *Miranda v. Arizona* (1966, p. 466) portrayed the right to silence as "the essential mainstay of our adversarial system."<sup>2</sup>

Notwithstanding the Supreme Court's endorsement of the right to silence, its value is constantly debated by policymakers and academics (see, e.g., Coldrey 1991; Greer, 1990). Advocates of the right to silence concede that it may help the guilty to avoid conviction, but argue that it protects other values such as personal dignity, free will, and freedom from government coercion (*Murphy v. Waterfront Commission*, 1964; Gerstein, 1970). Detractors of the right to silence maintain that it impedes the search for truth with no benefit to the innocent. Thus, as early as the beginning of the eighteenth century, the philosopher Jeremy Bentham, in the context of silence at trial, wrote "Innocence claims the right of speaking, as guilt invokes the privilege of silence." (Bentham, 1825; p. 241). Similarly, Judge Henry Friendly argued that no proof has been offered that the privilege indeed protects the innocent, and that "on balance the privilege so much more often shelters the guilty and even harms the innocent that ... its occasional effect in protection of the innocent would be an altogether insufficient reason." (Friendly, 1968; p. 686).<sup>3</sup>

In this article, we examine the effects of a right to silence on suspects' decisions to speak or remain silent during police interrogations.<sup>4</sup> We show that, contrary to Bentham's factual assertion, a right to silence helps the innocent by providing them a refuge against self-incrimination.

<sup>1</sup>Dershowitz (2008, chapter 1) provides a brief description of the right to silence.

<sup>2</sup>The Supreme Court in *Miranda* required that suspects be informed of the right to silence prior to questioning. Most civil law countries have adopted similar rules.

<sup>3</sup>The argument that the right to silence lacks merit is common in the legal literature. See, e.g., Dolinko, 1986.

<sup>4</sup>Our model applies equally to silence at trial. The decision to testify at trial, however, is also affected by the evidentiary rule that allows the prosecution to introduce the defendant's prior convictions as evidence if the defendant testified at trial.

We also show that a right to silence benefits innocent suspects even if they would have chosen to remain silent in the absence of a right to silence. Specifically, we show that the probability of an innocent suspect who remains silent being wrongfully convicted is lower if suspects have a right to silence.

To evaluate the effects of a right to silence on suspects' decision to speak or remain silent, we consider a strategic game between a suspect and a jury. The suspect is arrested for committing a crime, and is either innocent or guilty. The suspect, but not the jury, knows whether he committed the crime. The jury only knows the prior probability that the suspect is either innocent or guilty. The suspect is taken in for police interrogation, where he can make a statement (i.e., "speak"), remain silent, or confess to the crime. Confession results in conviction, but yields the suspect a higher payoff (i.e., lower sentence) than conviction at trial.

If the suspect does not confess, the case goes to trial. At trial, the jury observes *direct evidence* relating to the suspect's guilt. Either the direct evidence implicates the suspect in the crime or it does not. For example, incriminating evidence may be witness testimony or a physical object that suggests the suspect committed the crime. The direct evidence is informative but imperfect: It is more likely to incriminate a guilty suspect than an innocent suspect, but may incriminate an innocent suspect or fail to incriminate a guilty suspect.

Apart from the direct evidence, the jury also observes *indirect evidence* concerning the truthfulness of the suspect's police statement (if the suspect chose to make such statement). The indirect evidence either verifies or contradicts the suspect's police statement. We assume that the indirect evidence *always* verifies statements made by *some* innocent suspects ("clearly innocent suspects"). With respect to other suspects, the indirect evidence is more likely to verify innocent suspects' statements than guilty suspects' statements, but may contradict innocent suspects' statements or verify guilty suspects' statements. Thus, the indirect evidence is also informative but imperfect. That the indirect evidence may contradict both innocent and guilty suspects' statements implies that innocent and guilty suspects alike face the dilemma of whether to speak or remain silent.

The jury's payoff depends on its verdict and the suspect type. In particular, the jury obtains a payoff of 0 if it rightfully convicts or acquits the suspect and a (differential) negative payoff if it wrongfully convicts or acquits the suspect. In reaching its verdict, the jury consults both the direct evidence and the indirect evidence. We assume, however, that if clearly innocent suspects always speak in equilibrium, the jury maximizes its payoff by acquitting the suspect—irrespective of the realization of the direct evidence—if the indirect evidence verifies the suspect's statement. We accordingly examine equilibria in which clearly innocent suspects always speak—and thereby are always acquitted—so that a suspect's decision to remain silent might be considered as evidence

of guilt in the absence of a right to silence.<sup>5</sup>

The analysis proceeds by identifying the conditions under which a right to silence alters the equilibrium strategies of innocent and guilty suspects. We define a right to silence as a constraint imposed upon a jury to not convict a silent suspect in the absence of incriminating evidence. We show that a right to silence *directly* benefits innocent suspects by reducing the probability of wrongful conviction in two distinct circumstances. First, a right to silence provides innocent suspects, who are otherwise compelled to speak, with the alternative of silence. This benefits innocent suspects if the probability that the indirect evidence contradicts their statements is greater than the probability that the direct evidence incriminates them. Second, a right to silence benefits innocent suspects who would have remained silent even in the absence of a right to silence. Innocent suspects would rather remain silent than speak in the absence of a right to silence if the direct evidence is more informative than the indirect evidence. Since the direct evidence is more likely to incriminate guilty than innocent suspects, the cost of remaining silent is lower for innocent than for guilty suspects. Innocent suspects can thus partially separate from guilty suspects by remaining silent. In the absence of a right to silence, however, innocent suspects who remain silent are convicted with positive probability even if the direct evidence does not incriminate them. In the presence of a right to silence, by contrast, innocent suspects who remain silent are convicted if and only if the direct evidence incriminates them.

Our model also supports the argument that innocent suspects *indirectly* benefit from a right to silence (Seidmann and Stein, 2000). We show that a right to silence benefits innocent suspects who choose to speak (in the presence of a right to silence) because it induces guilty suspects to remain silent, thereby decreasing the probability that innocent suspects whose statements are contradicted by evidence are wrongfully convicted. This result—in contrast to Seidmann and Stein's argument—does not presuppose that the innocent always have incentives to speak.

The result that innocent suspects directly as well as indirectly benefit from a right to silence holds under both low and high premiums for confession. If the premium for confession is low, suspects never confess with or without a right to silence. If the premium for confession is high, by contrast, guilty suspects (probabilistically) confess in the absence of a right to silence. Innocent suspects directly benefit from a right to silence because the jury is prohibited from convicting a silent suspect in the absence of incriminating evidence. Innocent suspects indirectly benefit from a right to silence because the right induces guilty suspects to remain silent rather than to confess. Since guilty suspects earn a higher payoff from exercising their right to silence than from confessing, guilty suspects pool with innocent suspects (by speaking) with lower probability in the presence than in the absence of a right to silence. In the presence of a right to silence,

---

<sup>5</sup>Davies (2007, p. 9) proposes the following definition for an adverse inference from silence: "The law should permit an adverse inference to be drawn from silence either at police interview or in court when it would be reasonable to expect a denial, explanation or answer from an innocent defendant."

consequently, the jury convicts the suspect with lower probability if the evidence contradicts the suspect's statement. Thus, in contrast to the argument that a right to silence helps the innocent by reducing the incidence of *false* confessions (see, e.g., Greer, 1994), the analysis here suggests that a right to silence helps the innocent by reducing the incidence of *true* confessions.

Last, a right to silence is socially costly if juries' preferences are aligned with those of society. Specifically, if a right to silence affects suspects' equilibrium strategies, then the jury's equilibrium payoff is lower if suspects have a right to silence. As Seidmann (2005) points out, this is because a right to silence prevents the jury from considering information that would otherwise increase the accuracy of its decision. A right to silence may nevertheless be justified, as it may enhance innocent suspects' protection against wrongful conviction.<sup>6</sup>

This article is not the first to suggest that the innocent benefit from exercising their right to silence. The Supreme Court in *Ullmann v. United States* (1956, p. 426) notes that people "too readily assume that those who invoke [the right to silence] are either guilty of crime or commit perjury in claiming the privilege." Schulhofer (1991) suggests that the right to silence protects innocent defendants who cannot offer exonerating evidence from the risk involved in forced testimony. In particular, an innocent defendant might fear that he would appear guilty on the stand after skillful cross-examination: "If an innocent defendant chooses silence, it is because his judgment is that testifying will increase the chances of conviction." (p. 331). In a similar vein, Amar (1997) argues that the 'cruel trilemma' refers to innocent suspects who are forced to testify and concludes that "[a] desire to protect the innocent defendant from erroneous conviction . . . is wholly consistent with the deep structure of our Bill of Rights." The argument that the innocent directly benefit from a right to silence, however, has not been studied and illustrated in a formal model.

■ **Related Literature.** This article builds on the work of Seidmann and Stein (2000) and Seidmann (2005). These articles argue that a right to silence indirectly benefits the innocent by inducing the guilty to remain silent, thereby bolstering the credibility of innocent suspects' statements. Underlying this argument is the assumption that innocent suspects always benefit from (or at least never harmed by) making an exculpatory statement, for the evidence at trial never contradicts an innocent suspect's statement.<sup>7</sup> Seidmann and Stein accordingly conclude

---

<sup>6</sup>We do not attempt to resolve the claim that a desire to protect the innocent is better satisfied by a higher standard of proof; in Bentham's (1825, p. 240) *reductio ad absurdum* argument: "If it is wished to protect [the innocent] against punishment, it can be done at once, and at greater efficacy, by not allowing any investigation." Justifying a right to silence over other measures to protect the innocent might indeed involve non-utilitarian considerations.

<sup>7</sup>As Seidmann and Stein explain: "The only things that the suspect knows are that silence and lies usually indicate guilt and that the law enforcement authorities—the police and prosecutors—will utilize any such indications to the fullest extent that the law allows. Only guilty suspects face this dilemma. In contrast, for innocent suspects, telling a truthful story to the police can only improve (or at least not worsen) their position. Once again, this

that the main justification for a right to silence lies in the fact that it allows the jury to draw a *positive* inference from a suspect's decision *not* to remain silent.

This article shows that, given a possibility that evidence at trial contradicts their statements, innocent suspects may choose to remain silent in either the presence or absence of a right to silence. By suggesting that innocent suspects directly exercise their right to silence, this article provides a broader utilitarian justification for a right to silence than that offered by Seidmann and Stein. This justification avoids the criticism that juries are unlikely to respect a right to silence if *only* the guilty exercise it; for if innocent and guilty alike exercise the right to silence, then juries (if so instructed) can be expected to refrain from drawing an inference of guilt from silence. Perhaps more important, that innocent suspects might remain silent in the absence of a right to silence explains why substantially restricting the right to silence, as England did in 1994, does not cause *all* suspects to speak.

This article is also related to Mialon (2005), who examined the combined effects of a right to silence and a prosecution's disclosure requirement on social welfare. Mialon considers a model in which the evidence at trial either incriminates or exonerates the defendant. The defendant, however, may not know the evidence. If the defendant does not present exonerating evidence, then the jury could rationally infer that the defendant is more likely to be guilty. A right to silence prevents the jury from convicting the defendant upon failure to present exonerating evidence, thus directly benefiting innocent suspects who cannot provide such evidence. This article as well shows that a right to silence directly benefits the innocent. In contrast to Mialon's assumption that the innocent always offer exculpatory evidence, however, here we show that innocent suspects might be reluctant to make exculpatory statements if they fear that the evidence at trial might contradict their statements.

This article builds on the literature on strategic communication. The conflict of interest between the jury (receiver) and the suspect (sender) is akin to that in cheap-talk games (Crawford and Sobel, 1982) in that the jury's ideal action depends on the suspect type (innocent or guilty). Unlike standard cheap-talk games, all suspect types share identical preferences over the jury's action. The signaling technology is similar to that in communication models with verifiable messages (Grossman, 1979; Milrgrom, 1981; Milgrom and Roberts, 1986). But in contrast to the latter model, which assume complete provability, the verification technology here is imperfect in that it consists of an informative but imperfect signal on the suspect's statement (message). The presence of a right to silence, moreover, prevents the unraveling result that characterizes communication models with verifiable messages. Finally, the model here shares a similar feature

---

observation may not apply to very special cases, which we ignore for lack of representativeness." (Seidmann and Stein, 2000, p. 444). A more reasonable assumption, it seems, is that innocent suspects might be reluctant to tell a truthful story (or any story) if they did not trust their recollection or if they feared they might not be able to corroborate their story at trial.

with counter-signaling models (e.g., Feltovich, Harbaugh, and To, 2002) in that, in addition to the suspect's statement, the jury observes a noisy signal on the suspect type in the form of direct evidence. As we later show, the relative accuracy of the indirect evidence (the internal signal) as compared to the direct evidence (the exogenous signal), as well as the presence or absence of a right to silence, determines whether the innocent suspect chooses to speak or remain silent.

The rest of the article proceeds as follows. Section 2 presents the model. Section 3 examines a no-right-to-silence regime and Section 4 a right-to-silence regime, given a low premium for confession. Section 4 concludes by showing that innocent suspects benefit directly (if they remain silent) as well as indirectly (if they speak) from a right to silence. Section 5 examines the effects of a right to silence when the premium for confession is high, such that guilty suspects confess in equilibrium. It shows that a right to silence similarly benefits the innocent when the premium for confession is high. Section 6 concludes. Proofs are relegated to the Appendix.

## 2 Model

■ **Set up.** The model follows Seidmann (2005), but modifies some key assumptions. In period 0, a suspect is arrested for committing a crime. The suspect type,  $t \in \{0, 1, 2\}$ , is realized with prior probability  $p_t > 0$ , where  $\sum_t p_t = 1$ . The suspect is either clearly innocent (type 0), innocent (type 1), or guilty (type 2). The difference between these suspect types will be explained momentarily; note for now that only the guilty suspect is guilty of the crime. The suspect knows his type, but the police and the court do not. All other components of the model are common knowledge.

In period 1, in response to police questioning, the suspect can confess to the crime, remain silent, or make a statement. The suspect's statement may concern, for example, the whereabouts of the suspect at the time the crime was committed (i.e., an alibi) or whether the suspect was previously acquainted with the crime victim. If the suspect does not confess, the game proceeds to period 2.

In period 2, the case goes to trial and evidence is presented to a jury. In period 3, after consulting the evidence, the jury decides whether to acquit or convict the suspect.

■ **Evidence.** The evidence at trial consists of two independent random variables: direct and indirect evidence. The *direct evidence*,  $\varepsilon_d \in \{1, 2\}$ , is an informative but imperfect signal about the suspect's *type*. The direct evidence is either non-incriminating ( $\varepsilon_d = 1$ ), suggesting that the suspect is either clearly innocent or innocent,<sup>8</sup> or incriminating ( $\varepsilon_d = 2$ ), suggesting that the

---

<sup>8</sup>We assume that when the direct evidence is non-incriminating, it does not distinguish between the clearly innocent suspect and the innocent suspect.



suspect is guilty. Incriminating evidence might be an object or witness testimony that directly implicates the suspect in the crime.<sup>9</sup> Let  $\theta_t \equiv \Pr(\varepsilon_d = 1|t)$  be the probability that the direct evidence is non-incriminating, conditional on the suspect's type. We assume that

$$1 > \theta_i > \theta_2 > 0, \text{ for } i = 0, 1.$$

That is, the direct evidence might incriminate the clearly innocent suspect or the innocent suspect, but is more likely to incriminate the guilty suspect.<sup>10</sup>

The *indirect evidence*,  $\varepsilon_i \in \{v, nv\}$ , is an informative but imperfect signal about the *truthfulness* of the suspect's period-1 statement, conditional on the suspect making such statement.<sup>11</sup> The indirect evidence either verifies ( $\varepsilon_i = v$ ) or contradicts ( $\varepsilon_i = nv$ ) the suspect's statement; it may consist, for example, of a witness testimony that affirms or refutes the suspect's alibi. Let  $\delta_t \equiv \Pr(\varepsilon_i = v|t)$  be the probability that the indirect evidence verifies the suspect's period-1 statement, conditional on the suspect's type. We assume that

$$1 = \delta_0 > \delta_1 > \delta_2 > 0.$$

That is, the indirect evidence *always* verifies the clearly innocent suspect's statement, might contradict the innocent suspect's statement, but it is more likely to verify the innocent suspect's statement than the guilty suspect's statement.<sup>12</sup> The indirect evidence might contradict the innocent suspect's statement if his statement were inaccurate or if he failed to corroborate his statement at trial. For example, the innocent suspect might have a faulty recollection of the facts that establish his alibi or might be susceptible to poor performance under cross-examination.<sup>13</sup>

Note that the indirect evidence is offered at trial if and only if the suspect chose to make a statement in period 1. Thus, the suspect can avoid the indirect evidence by not making a statement. (Although, in the absence of a right to silence, the jury might draw an adverse inference from the suspect's silence.) The direct evidence, in contrast, is always offered at trial. The evidence at trial is thus a pair  $(\varepsilon_d, \varepsilon_i) \in \{1, 2\} \times \{v, nv\}$ , if the suspect made a statement in period 1, and  $\varepsilon_d \in \{1, 2\}$  if the suspect did not make such statement.<sup>14</sup>

<sup>9</sup>Non-incriminating evidence is simply the lack of incriminating evidence.

<sup>10</sup>Note that  $\theta_0$  may be either greater or smaller than  $\theta_1$ .

<sup>11</sup>We assume that the suspect's statement is tantamount to silence if his statement is unverifiable.

<sup>12</sup>The assumption that  $\delta_0 = 1$  is made for simplicity; the article's results continue to hold for  $\delta_0 \in (\max\{\theta_0, \delta_1\}, 1)$ .

<sup>13</sup>Note that the innocent suspect cannot avoid an adverse inference from contradiction by stating that his recollection is poor because such a statement can be easily mimicked by the guilty suspect.

<sup>14</sup>The jury thus has six information sets: two if the suspect remains silent; and four if the suspect speaks. In each information set the jury may either acquit or convict the suspect; accordingly, the jury has 64 ( $2^6$ ) pure strategies.

Before proceeding, it is worth contrasting the setup of this model with those of previous works on the right to silence (Mialon, 2005; Seidmann, 2005). Seidmann considers a model in which a suspect is either guilty or one of many innocent types and the evidence at trial might implicate the guilty suspect and one of the innocent suspects in the crime. The quality of the evidence in his model also depends on whether it verifies or contradicts the suspect's police statement. The model here shares similar features, but differs from Seidmann's modeling of the evidence in three main respects. First, Seidmann assumes that the evidence is direct in that it is offered at trial irrespective of whether the suspect made a police statement. Here, in contrast, we distinguish between direct and indirect evidence; the former is always offered at trial, whereas the latter is available at trial only if the suspect made a police statement. Second, whereas the evidence in Seidmann's model is a partition of type space, here the direct evidence consists of a binary, single-valued signal concerning the suspect's guilt. Third, Seidmann assumes that the evidence never contradicts innocent suspects' statements and that innocent types differ in the probability that the evidence implicates them in the crime. In this model, in contrast, we assume that the evidence may contradict innocent suspects' statements and that innocent types differ in the probability that the evidence verifies their statements. In addition, unlike Seidmann's model, we assume only two innocent types: those who always prove their statements and those whose statements may be contradicted by the evidence.

Mialon's model involves a strategic game among a defendant, a prosecution and a jury in which the evidence at trial concerns the defendant's guilt. The model here, by contrast, involves only a suspect and a jury and assumes that the evidence at trial concerns both the suspect's guilt and the suspect's statement. Mialon further assumes that the defendant knows the evidence with some positive probability. Thus the defendant is silent in Mialon's model either because he possesses inculpatory evidence or because he does not know the evidence. Here, in contrast, we assume that suspects do not know the direct evidence, but only the probability with which this evidence is incriminating. As we later show, suspects might choose to remain silent if they fear that the evidence at trial might contradict their statements.

■ **Payoffs and Equilibrium.** We normalize the suspect's payoff so that the suspect receives a payoff of 1 if acquitted, a payoff of 0 if convicted, and a payoff of  $0 < u < 1$  if he confesses. We will refer to  $u$  as the 'confession premium.'

Following Feddersen and Pesendorfer (1998) and Seidmann (2005), we normalize the jury's payoff as follows. The jury obtains a payoff of 0 if it rightfully convicts or acquits the suspect, a payoff of  $-D$  if it wrongfully convicts the suspect, and a payoff of  $-(1 - D)$  if it wrongfully acquits the suspect, where  $D \in (0, 1)$ . The parameter  $D$  represents the standard of proof, or the minimum probability of guilt required for conviction. It therefore reflects the jury's relative costs of Type I (wrongful conviction) versus Type II (wrongful acquittal) error.

The suspect's strategy in period 1 maps the suspect's type to a probability distribution over speech, silence, and confession. The jury's strategy is a probability of conviction for each of the jury's information sets. The jury's belief,  $\hat{D}$ , is a posterior estimate that the suspect is guilty, given the suspect's equilibrium strategy and the realization of the evidence. In a perfect Bayesian equilibrium: (i) the suspect's strategy maximizes its payoff given the jury's equilibrium strategy; (ii) the jury's strategy maximizes its payoff given its posterior belief about the suspect's type; and (iii) the jury's belief is consistent with the suspect's equilibrium strategy and Bayes rule along the equilibrium path.<sup>15</sup>

■ **Assumptions.** We make the following assumptions about the jury's payoff-maximizing decisions given the suspect's strategy and the realization of the evidence.

**A1.** (*probative value of the direct evidence*)

$$\frac{p_2(1 - \theta_2)}{p_0(1 - \theta_0) + p_1(1 - \theta_1)} > \frac{D}{1 - D} > \frac{p_2\theta_2}{p_0\theta_0 + p_1\theta_1}.$$

A1 implies that, if all suspect types are silent and  $\varepsilon_d = 2$  ( $\varepsilon_d = 1$ ), then  $\hat{D} > (<)D$ .<sup>16</sup> It follows that, if all suspect types are silent on the equilibrium path, the jury maximizes its payoff by (i) always convicting if the direct evidence incriminates the suspect, and (ii) always acquitting if the direct evidence does not incriminate the suspect. A1 thus reflects the notion that the direct evidence *itself* has probative value.

**A2.** (*reasonable doubt*)

$$\frac{D}{1 - D} > \frac{p_2(1 - \theta_2)\delta_2}{p_0(1 - \theta_0)}.$$

A2 implies that, if the clearly innocent suspect and the guilty suspect always speak,  $\varepsilon_i = v$ , and  $\varepsilon_d = 2$ , then  $\hat{D} < D$ . It follows that if the suspect is either the clearly innocent suspect or the guilty suspect, the jury maximizes its payoff by always acquitting if the indirect evidence verifies the suspect's statement, even if the direct evidence incriminates the suspect. A2 reflects the notion that if the indirect evidence does not rule out the possibility that the suspect is the

<sup>15</sup>More specifically, for the jury's belief about the suspect type to be consistent with Bayes rule, the jury must base its belief on the suspect's equilibrium strategy, the realization of  $\varepsilon_d$ , and, if the suspect made a statement in period 1, on the realization of  $\varepsilon_i$ .

<sup>16</sup>Note that A1 implies (i)  $p_2(1 - \theta_2)(1 - D) > [p_0(1 - \theta_0) + p_1(1 - \theta_1)]D$ , and (ii)  $(p_0\theta_0 + p_1\theta_1)D > p_2\theta_2(1 - D)$ . The former inequality reflects the fact that if  $\varepsilon_d = 2$ , the jury's expected cost of wrongful acquittal is greater than that of wrongful conviction; the latter inequality reflects the fact that if  $\varepsilon_d = 1$ , the jury's expected cost of wrongful conviction is greater than that of wrongful acquittal.

clearly innocent suspect, the jury has a reasonable doubt about the suspect's guilt and therefore maximizes its payoff by acquitting the suspect.<sup>17</sup>

One equilibrium, given A1, is for all suspect types to always remain silent. The jury, in turn, convicts the suspect if the direct evidence incriminates the suspect and acquits the suspect otherwise. This equilibrium is supported by the jury's (off-equilibrium) beliefs that a speaking suspect must be guilty. An equilibrium in which all suspect types remain silent, however, does not lend insight into the effects of a right to silence. Accordingly, following A1 and A2, we shall restrict attention to equilibria in which the clearly innocent suspect always speaks and thereby is always acquitted;<sup>18</sup> we later refine the set of equilibria in which the clearly innocent suspect always speaks by using the D1 criterion. Note that the assumption that the clearly innocent suspect is acquitted for sure if he always speaks, even if pooled with the guilty suspect, stands in contrast to Seidmann (2005), who did not assume any such type of innocent suspects.<sup>19</sup>

**A3.** (*adverse inference*)

$$\frac{p_2\theta_2}{p_1\theta_1} > \frac{D}{1-D}.$$

A3 implies that, if the suspect is either the innocent suspect or the guilty suspect, then  $\hat{D} > D$  for  $\varepsilon_d = 2$ . It follows from A3 that if the clearly innocent suspect always speaks, but the innocent suspect and the guilty suspect always remain silent, the jury maximizes its payoff by always convicting a silent suspect, even if the direct evidence is not incriminating. We call this state of affairs "adverse inference from silence." A3 also implies that  $\frac{p_2(1-\delta_2)\theta_2}{p_1(1-\delta_1)\theta_1} > \frac{D}{1-D}$ ; that is, if both the innocent and guilty suspects always speak and  $\varepsilon_i = nv$ , then  $\hat{D} > D$  for  $\varepsilon_d = 2$ . This notion of adverse inference differs from that in Mialon (2005). Whereas in Mialon's model the suspect's silence indicates that the suspect might possess inculpatory evidence, here the jury's adverse inference from silence concerns the suspect's information on the probability the evidence contradicts his statement.

We can now define a right to silence ("RTS") as follows.

**Definition 1.** *If suspects have a right to silence, then the jury may not convict a silent suspect in the absence of incriminating evidence.*

<sup>17</sup>If the innocent suspect speaks with positive probability, then A2 holds *a fortiori*.

<sup>18</sup>Recall that by A2 the jury maximizes its payoff by acquitting the suspect if the clearly innocent suspect always speaks in equilibrium.

<sup>19</sup>Note further that, whereas Seidmann (2005) focuses on equilibria in which innocent types always speak in the presence and absence of a right to silence—equilibria in which innocent types remain silent without a right to silence are invariant to the presence of a right to silence in his setting—here we assume that a subset of innocent suspects may either speak or remain silent in the absence of a right to silence and show that a right to silence might affect innocent suspects' equilibrium payoff as well as their decision to speak or remain silent.

If the suspect is silent and no inference is made from silence, then by A1 the posterior probability of guilt in the absence of incriminating evidence is lower than  $D$ . Definition 1 implies that a right to silence prohibits the jury from making adverse inferences about the suspect's guilt based on the suspect's silence. Instead, the jury must observe incriminating evidence to convict a silent suspect. Specifically, if the direct evidence incriminates the suspect, then by A1 the posterior probability that a silent suspect is guilty, given the prior probability of guilt, is greater than  $D$ . Thus, if the direct evidence incriminates the suspect, the jury may convict a silent suspect without drawing an adverse inference from silence.

**A4.** (*Confession Premium*)

$$u \neq \theta_2 \neq \delta_2.$$

A4 is made for computational convenience and does not detract from the generality of our results. Following A4, we can restrict the analysis to the following cases:

- $\min\{\theta_2, \delta_2\} > u$ ;
- $\theta_2 > u > \delta_2$ ;
- $\delta_2 > u > \theta_2$ ;
- $u > \max\{\theta_2, \delta_2\}$ .

■ **Effectiveness of a Right to Silence.** We proceed by considering parameter values under which a right to silence affects the equilibrium play of the game. Consider a strategy profile in which a right to silence constrains the jury's best response; we say in this case that a right to silence is 'effective.' Given that a right to silence is effective, the guilty suspect's payoff from silence is  $\theta_2$ . To see why, note that, when a right to silence is effective, the jury maximizes its payoff—but for the right the silence—by convicting a silent suspect if the direct evidence is non-incriminating. If a right to silence is effective, therefore, the jury maximizes its payoff by convicting a silent suspect if the direct evidence is incriminating.<sup>20</sup> Now, if  $\theta_2 < \max\{\delta_2, u\}$ , the guilty suspect's equilibrium payoff from silence must be greater than  $\theta_2$ ; for otherwise the guilty suspect could deviate to either speech or confession. If  $\theta_2 < \max\{\delta_2, u\}$ , therefore, a right to

<sup>20</sup>To see this formally, suppose that suspects have a right to silence, a right to silence is effective, and the equilibrium probabilities with which the innocent and guilty suspects remain silent, respectively, are  $x \in [0, 1]$  and  $y \in (0, 1]$ . Then we have  $D < \frac{p_2 \theta_2 y}{p_2 \theta_2 y + p_1 \theta_1 x} = \frac{p_2 (1 - \theta_2) y}{p_2 (1 - \theta_2) y + p_1 \frac{\theta_1}{\theta_2} (1 - \theta_2) x} < \frac{p_2 (1 - \theta_2) y}{p_2 (1 - \theta_2) y + p_1 (1 - \theta_1) x}$ , where the left inequality follows from the fact that a right to silence is effective, the equality follows by multiplying the numerator and denominator by  $\frac{1 - \theta_2}{\theta_2}$ , and the right inequality follows because  $\theta_1 > \theta_2$ .

silence is not effective in equilibrium and the equilibrium play of the game is thus invariant to the presence of a right to silence.<sup>21</sup> We accordingly restrict the analysis to two cases:

- $\theta_2 > \delta_2 > u$ ; we will refer to this case as a "low premium for confession;" or
- $\theta_2 > u > \delta_2$ ; we will refer to this case as a "high premium for confession."

If the premium for confession is low, then no suspect confesses in equilibrium. To see why, note that if the premium for confession is low, the guilty suspect's payoff from confession ( $u$ ) is lower than his payoff from speech ( $\delta_2$ ); the guilty suspect, therefore, never confesses in equilibrium. Since the innocent suspect's equilibrium payoff is always greater than the guilty suspect's equilibrium payoff, the innocent suspect never confesses in equilibrium either. As we show in Section 5, only the guilty suspect finds it profitable to confess when the premium for confession is high.

### 3 No Right-to-Silence

In this section, we consider the case in which suspects do not have a right to silence and the premium for confession is low. In the absence of a right to silence, there exists no pooling equilibrium in which both the innocent and guilty suspects always remain silent. This is because, by A3 (adverse inference), the jury would draw an adverse inference of guilt from the suspect's silence (recall that the clearly innocent suspect always speaks in equilibrium). The guilty suspect could then exonerate himself with positive probability by making a statement, since the indirect evidence verifies his statement with positive probability and the jury always acquits the suspect if the evidence verifies the suspect's statement (because the jury believes that in equilibrium only the clearly innocent suspect speaks).

Moreover, there exists no *completely* separating equilibrium in which the innocent suspect always speaks (remains silent) and the guilty suspect always remains silent (speaks), for the jury would always acquit a speaking (silent) suspect and always convict a silent (speaking) suspect. The guilty suspect could then profitably deviate to speech (silence), thereby exonerating himself with certainty. A similar argument rules out equilibria in which the innocent suspect mixes between silence and speech and the guilty suspect either always remains silent or always speaks.

---

<sup>21</sup>More specifically, if a right to silence is not effective, then in equilibrium, irrespective of the presence or absence of a right to silence, the guilty suspect either always speaks, mixes between speech and confession, or mixes between silence and either speech or confession. In particular, the probability with which the guilty suspect remains silent is sufficiently low such that the jury doesn't always convict a silent suspect if the evidence is incriminating.

Finally, there does not exist an equilibrium in which the innocent suspect always speaks and the guilty suspect mixes between silence and speech, since the guilty suspect is always convicted if he remains silent but is acquitted with positive probability if he speaks. The guilty suspect, therefore, could profitably deviate to speech.

Two equilibrium candidates are left. In one equilibrium, both the innocent and guilty suspects always speak. In the other equilibrium, the innocent suspect always remains silent and the guilty suspect mixes between speech and silence. Proposition 1 presents these equilibria. As a tie-breaking rule here and throughout the article, we assume that the innocent suspect always speaks if he is indifferent between speech and silence.<sup>22</sup> In this and the following propositions, we relegate the jury's out-of-equilibrium beliefs and strategy to the Appendix.

**Proposition 1.** (*equilibrium strategies without RTS and low confession premium*)

*The following strategy profiles constitute the unique perfect Bayesian equilibria that survive the D1 refinement (see Cho and Kreps, 1987):<sup>23</sup>*

(a) *if  $\frac{\delta_1}{\theta_1} \geq \frac{\delta_2}{\theta_2}$ : both the innocent and guilty suspects always speak. The jury always acquits if  $\varepsilon_i = v$  and always convicts if  $\varepsilon_i = nv$ , for  $\varepsilon_d = 1, 2$ .*

(b) *if  $\frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$ : the innocent suspect always remains silent, and the guilty suspect remains silent with probability  $\frac{p_1\theta_1}{p_2\theta_2} \frac{D}{1-D} \in (0, 1)$  and speaks with the complementary probability. The jury always acquits if  $\varepsilon_i = v$  and always convicts if  $\varepsilon_i = nv$ , for  $\varepsilon_d = 1, 2$ . The jury always convicts if the suspect is silent and  $\varepsilon_d = 2$ . The jury acquits with probability  $\frac{\delta_2}{\theta_2} \in (0, 1)$  and convicts with the complementary probability if the suspect is silent and  $\varepsilon_d = 1$ . ||*

Part (a) presents a *pooling equilibrium* in which both the innocent and guilty suspects always speak. If the indirect evidence verifies the suspect's statement, even if the direct evidence incriminates the suspect, then the jury acquits the suspect because of A2 (reasonable doubt); if the indirect evidence contradicts the suspect's statement, even if the direct evidence does not incriminate the suspect, then the jury convicts the suspect because of A3 (adverse inference). The jury's decision thus depends solely on the realization of the indirect evidence.

Part (b) presents a *semi-pooling equilibrium* in which the innocent suspect always remains

---

<sup>22</sup>For non-generic parameter values such that  $\frac{\delta_1}{\theta_1} = \frac{\delta_2}{\theta_2}$  there may exist multiple equilibria in which both the innocent and guilty suspects strictly mix between speech and silence. In any such equilibrium, the equilibrium payoffs of the innocent and guilty suspects, respectively, are  $\delta_1$  and  $\delta_2$ . To simplify the exposition, we assume that the innocent suspect always speaks—and thereby obtains  $\delta_1$ —if he is indifferent between speech and silence; this, in turn, implies that the guilty suspect always speaks too, thereby earning  $\delta_2$ .

<sup>23</sup>The D1 refinement requires that, upon observing a deviation from the equilibrium path, the jury puts zero weight on suspect  $t \in \{1, 2\}$  if the set of jury's acquittal probabilities for which that suspect finds the deviation profitable is strictly smaller than the set for which the other suspect finds the deviation profitable. We use the D1 refinement to rule out a pooling equilibrium when the equilibrium outcome is semi-pooling.

silent and the guilty suspect mixes between speech and silence. If the suspect speaks, the jury's strategy is identical to that in part (a). If the suspect remains silent, the jury's strategy depends on the realization of the direct evidence. Specifically, the jury always convicts a silent suspect if the direct evidence incriminates the suspect and convicts a silent suspect with positive probability if the direct evidence does not incriminate the suspect. This probability is such that the guilty suspect is indifferent between speech and silence and is sufficiently low that the innocent suspect prefers to remain silent than to speak. The guilty suspect's equilibrium probability of remaining silent, in turn, is such that the jury is indifferent between acquitting and convicting a silent suspect if the direct evidence is not incriminating.

Note that the equilibrium outcome—pooling versus semi-pooling equilibrium—depends on the relative accuracy of the indirect evidence ( $\frac{\delta_1}{\delta_2}$ ) versus the direct evidence ( $\frac{\theta_1}{\theta_2}$ ). Specifically, if the indirect evidence is more (less) accurate than the direct evidence (i.e.,  $\frac{\delta_1}{\delta_2} > (<) \frac{\theta_1}{\theta_2}$ ), then the innocent suspect can best separate himself from the guilty suspect by always speaking (remaining silent). That the innocent suspect remains silent in equilibrium is an upshot of the assumptions that the indirect evidence might contradict the innocent suspect's statement and that the direct evidence is less likely to incriminate the innocent than the guilty suspect.

Although the empirical evidence on suspects' decisions to speak or remain silent is scarce, the available evidence indicates that not *all* suspects choose to speak in the absence of a right to silence. Specifically, although the substantial restriction of the right to silence in England in 1994 reduced the incidence of silence during police interrogations, significant percentage of suspects still chose to remain silent after 1994.<sup>24</sup> For example, Bucke, Street and Brown (2000, p. 32) report that, among suspects receiving legal advice, the proportion of suspects refusing to answer all questions fell from 20 per cent (before 1994) to 13 per cent (after 1994). The semi-pooling equilibrium in Proposition 1(b) provides a possible explanation as to why suspects might choose to remain silent even in the absence of a right to silence: Since the direct evidence is more likely to incriminate a guilty suspect than an innocent suspect, silence is more costly for the guilty than the innocent; the innocent, in turn, can signal their innocence by remaining silent.

To illustrate the equilibria without a right to silence, consider the following examples:

**Example 1.** (*pooling equilibrium without RTS*) If  $\theta_1 \approx \theta_2$  ( $\Rightarrow \frac{\delta_1}{\theta_1} > \frac{\delta_2}{\theta_2}$ ), then both the innocent and the guilty suspects always speak. Intuitively, if the direct evidence is not informative, the innocent suspect can best separate himself from the guilty suspect by always speaking.

**Example 2.** (*semi-pooling equilibrium without RTS*) If  $\delta_1 \approx \delta_2$  ( $\Rightarrow \frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$ ), then the innocent suspect always remains silent and the guilty suspect mixes between speech and silence. Intuitively,

<sup>24</sup>According to Section 34 of the 1994 Criminal Justice Act, the court may draw an adverse inference from, among other things, failure during police questioning to mention facts which "in the circumstances existing at the time the accused could reasonably have been expected to mention...."



*if the indirect evidence is not informative, the innocent suspect can best separate himself from the guilty suspect by always remaining silent.*

**Corollary 1.** *(equilibrium payoff without RTS and low confession premium)*

*(a) The innocent suspect's equilibrium payoff is  $\delta_1$  if he always speaks in equilibrium and  $\theta_1 \frac{\delta_2}{\theta_2} \in (\delta_1, \theta_1)$  if he always remains silent in equilibrium.*

*(b) The guilty suspect's equilibrium payoff is  $\delta_2$ , irrespective of his equilibrium strategy.*

The innocent suspect's equilibrium payoff is equal to or greater than  $\delta_1$ , since the innocent suspect can always secure a payoff of  $\delta_1$  by speaking. Thus, the innocent suspect remains silent if and only if his payoff from silence is greater than  $\delta_1$ . The guilty suspect's equilibrium payoff is  $\delta_2$ , since in any equilibrium in which suspects do not have a right to silence, the guilty suspect speaks—thereby obtaining  $\delta_2$ —with positive probability.

## 4 Right to Silence

In this section, we consider the case in which suspects have a right to silence. Recall that a right to silence prevents a jury from drawing an inference of guilt from the suspect's silence. Specifically, if the suspect remains silent, the jury must reach its verdict based solely on the presence or absence of incriminating evidence, rather than on the suspect's decision to remain silent.

As in the case in which suspects do not have a right to silence, there does not exist a completely separating equilibrium in which the innocent suspect always speaks (remains silent) and the guilty suspect always remains silent (speaks). A similar argument rules out equilibria in which the innocent suspect mixes between speech and silence and the guilty suspect either always remains silent or always speaks. In addition, that a right to silence is effective (i.e.,  $\theta_2 > \delta_2$ ) implies that there does not exist a pooling equilibrium in which both the innocent and guilty suspects always speak, for the guilty suspect could profitably deviate to silence. For the same reason, there does not exist a semi-pooling equilibrium in which the innocent suspect always remains silent and the guilty suspect mixes between speech and silence.

The presence of a right to silence, however, introduces two equilibria that are not present if suspects do not have a right to silence. In one equilibrium, both the innocent and guilty suspects always remain silent. (Recall that if suspects do not have a right to silence, the jury would draw an inference of guilt from silence, thereby inducing both suspects to profitably deviate to speech). In the other equilibrium, the innocent suspect always speaks and the guilty suspect mixes between speech and silence. (Recall that if suspects do not have a right to silence, the jury would draw

an inference of guilt from silence, thereby inducing the guilty suspect to profitably deviate to speech). Proposition 2 presents these equilibria.

**Proposition 2.** (*equilibrium strategies with RTS and low confession premium*)

The following strategy profiles constitute the unique perfect Bayesian equilibria that survive the D1 refinement:

(a) if  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} > \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ : both the innocent and guilty suspects always remain silent. The jury always acquits if the suspect is silent and  $\varepsilon_d = 1$  and always convicts if the suspect is silent and  $\varepsilon_d = 2$ .

(b) if  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} \leq \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ : the innocent suspect always speaks, and the guilty suspect speaks with probability  $\frac{p_1(1 - \delta_1)\theta_1}{p_2(1 - \delta_2)\theta_2} \frac{D}{1 - D} \in (0, 1)$  and remains silent with the complementary probability. The jury always acquits if  $\varepsilon_i = v$ , for  $\varepsilon_d = 1, 2$ . The jury always convicts if  $\varepsilon_i = nv$  and  $\varepsilon_d = 2$ . The jury acquits with probability  $\frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2} \in (0, 1)$  and convicts with the complementary probability if  $\varepsilon_i = nv$  and  $\varepsilon_d = 1$ . The jury always acquits if the suspect is silent and  $\varepsilon_d = 1$  and always convicts if the suspect is silent and  $\varepsilon_d = 2$ . ||

Part (a) presents a *pooling equilibrium* in which both the innocent and guilty suspects exercise the right to silence. Since suspects have a right to silence, the jury must acquit a silent suspect if the evidence does not incriminate the suspect, even though, by A3 (adverse inference) the jury would maximize its payoff by convicting a silent suspect. The jury thus convicts a silent suspect if and only if the direct evidence incriminates the suspect.

Part (b) presents a *semi-pooling equilibrium* in which only the guilty suspect exercises his right to silence. The jury in turn convicts a silent suspect only if the direct evidence is incriminating. (In the absence of a right to silence, recall, the jury would draw an adverse inference from silence and would always convict a silent suspect.) If the suspect speaks, the jury convicts the suspect with positive probability if the direct evidence is non-incriminating and the indirect evidence contradicts the suspect's statement.<sup>25</sup> This probability is such that the guilty suspect is indifferent between speech and silence and is sufficiently low so that the innocent suspect prefers to speak than to remain silent. Note that, in contrast to the pooling equilibrium without a right to silence, the jury does not *always* convict a suspect whose statement is contradicted by the indirect evidence.

To illustrate the equilibria with a right to silence, consider the following examples:

**Example 3.** (*pooling equilibrium with RTS*)

If  $\delta_1 \approx \delta_2$  ( $\Rightarrow \frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} > \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ ), then both the innocent and guilty suspects always remain silent. Intuitively, if the indirect evidence is not informative, the innocent suspect can best separate himself from the guilty suspect by always remaining silent.

<sup>25</sup>Note that in this case the jury conditions its decision both on the direct evidence and the indirect evidence.

**Example 4.** (semi-pooling equilibrium with RTS)

If  $\theta_1 \approx \theta_2$  ( $\Rightarrow \frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} < \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ ), then the innocent suspect always speaks and the guilty suspect mixes between speech and silence. Intuitively, if the direct evidence is not informative, the innocent suspect can best separate himself from the guilty suspect by always speaking.

The next corollary considers suspects' equilibrium payoffs if suspects have a right to silence.

**Corollary 2.** (equilibrium payoffs with RTS and low confession premium)

(a) The innocent suspect's equilibrium payoff is  $\delta_1 + (1 - \delta_1)\theta_1 \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2} \in (\max\{\theta_1, \delta_1\}, 1)$  if he always speaks in equilibrium and is  $\theta_1$  if he always remains silent in equilibrium.

(b) The guilty suspect's equilibrium payoff is  $\theta_2$  irrespective of the equilibrium outcome.

The innocent suspect's equilibrium payoff is equal to or greater than  $\theta_1$ , since the innocent suspect can always secure a payoff of  $\theta_1$  by exercising his right to silence. Thus, the innocent suspect speaks if and only if his payoff from speech is greater than  $\theta_1$ . Moreover, the innocent suspect's payoff from speech is greater than  $\delta_1$  since, given that the guilty suspect not always speaks, the jury does not always convict if the evidence contradicts the suspect's statement. The guilty suspect's equilibrium payoff is  $\theta_2$ , since in any equilibrium in which suspects have a right to silence, the guilty suspect remains silent—thereby obtaining  $\theta_2$ —with positive probability.

Proposition 3 considers the effects of a right to silence on the equilibrium strategies of the innocent and guilty suspects when the premium for confession is low.

**Proposition 3.** (effects of RTS on equilibrium strategies with low confession premium)

(a) If  $\frac{\delta_1}{\theta_1} \geq \frac{\delta_2}{\theta_2}$  and  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} \leq \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ , the innocent suspect always speaks with and without RTS; the guilty suspect always speaks without RTS and mixes between speech and silence with RTS.

(b) If  $\frac{\delta_1}{\theta_1} \geq \frac{\delta_2}{\theta_2}$  and  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} > \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ , both the innocent and guilty suspects always speak without RTS, and always remain silent with RTS.

(c) If  $\frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$ , the innocent suspect always remains silent with and without RTS; the guilty suspect mixes between speech and silence without RTS and always remains silent with RTS.

(d) If the innocent suspect always remains silent without RTS, then he also always remains silent with RTS (i.e., if  $\frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$  then  $\frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2} < \frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1}$ ). ||

Part (a) presents the case in which a right to silence causes the guilty suspect to shift from always speaking to mixing between speech and silence, but does not alter the innocent suspect's equilibrium strategy of always speaking. This effect of a right to silence is similar to the one

identified by Seidmann and Stein (2000) and Seidmann (2005).<sup>26</sup> Parts (b) and (c) present the cases in which both the innocent and guilty suspects exercise the right to silence: in part (b), a right to silence causes *both* the innocent and guilty suspects to shift from always speaking to always remaining silent; in part (c), a right to silence causes the guilty suspect to shift from mixing between silence and speech to always remaining silent, but does not alter the innocent suspect's equilibrium strategy of always remaining silent. Part (d) implies that a right to silence never causes suspects to shift from silence to speech (the reverse is not true). Thus, the introduction of a right to silence lowers the incidence of police statements.

To illustrate the effects of a right to silence on suspects' equilibrium strategies, consider the following examples:

**Example 5.** *If  $\theta_1 \approx \theta_2$  ( $\Rightarrow \frac{\delta_1}{\theta_1} > \frac{\delta_2}{\theta_2}$  and  $\frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2} > \frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1}$ ), then the innocent suspect always speaks with and without RTS; the guilty suspect always speaks without RTS and mixes between speech and silence with RTS.*

**Example 6.** *If  $\delta_1 \approx \delta_2$  ( $\Rightarrow \frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$  and  $\frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2} < \frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1}$ ), then the innocent suspect always remains silent with and without RTS; the guilty suspect mixes between speech and silence without RTS and always remains silent with RTS.*

**Example 7.** *If  $\delta_1 = 0.8$ ,  $\delta_2 = 0.7$ ,  $\theta_1 = 0.9$ , and  $\theta_2 = 0.8$  ( $\Rightarrow \frac{0.8}{0.9} = \frac{\delta_1}{\theta_1} > \frac{\delta_2}{\theta_2} = \frac{0.7}{0.8}$  and  $\frac{0.1}{0.24} = \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2} < \frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} = \frac{0.1}{0.18}$ ), then both the innocent and guilty suspects always speak without RTS and always remain silent with RTS.*

Proposition 4 summarizes the effects of a right to silence on the equilibrium payoffs of the innocent suspect, the guilty suspect, and the jury.

**Proposition 4.** *(equilibrium payoffs with and without RTS and low premium for confession)*

(a) *Both the innocent and guilty suspects' equilibrium payoffs are higher with RTS than without RTS.*

(b) *The jury's equilibrium payoff is higher without RTS than with RTS. ||*

The intuition for part (a) is as follows. The probability with which the jury convicts the suspect is lower when suspects have a right to silence if (i) the suspect is silent and the direct evidence is non-incriminating, or (ii) the suspect speaks and the indirect evidence contradicts the

<sup>26</sup>Seidmann and Stein (2000) and Seidmann (2005) focus, in contrast, on a completely separating equilibrium wherein innocent suspects always speak and the guilty suspect always exercises his right to silence. This equilibrium follows, inter alia, from their assumption that only the guilty suspect's statement might be contradicted by the evidence at trial.

suspect's statement. Since in any equilibrium in which a right to silence is effective the innocent suspect, the guilty suspect, or both suspects remain silent or speak, both the innocent and guilty suspects benefit from a right to silence.

More specifically, if the innocent suspect speaks with and without a right to silence, the innocent suspect *indirectly* benefits from a right to silence because the jury does not always convict him if the indirect evidence contradicts his statement, as in the case where suspects do not have a right to silence. If the innocent suspect shifts from always speaking to always remaining silent, then the innocent suspect *directly* benefits from a right to silence, because his equilibrium payoff if he remains silent in the presence of a right to silence ( $\theta_1$ ) is greater than if he speaks in the absence of a right to silence ( $\delta_1$ ). Finally, if the innocent suspect remains silent with and without a right to silence, then the innocent suspect *directly* benefits from a right to silence, as the right prohibits the jury from convicting a silent suspect if the evidence is not incriminating. In the absence of a right to silence, by contrast, the innocent suspect is convicted with positive probability when he remains silent even if the direct evidence is not incriminating.

The jury's equilibrium payoff, by contrast, is always lower if suspects have a right to silence—this holds for *any* effect that a right to silence might have on the suspects' equilibrium strategies. The intuition for this result, as pointed out by Seidmann (2005), is that a commitment to ignore information cannot make the jury better off. A right to silence may nevertheless be justified as a means of enhancing the protection given to innocent suspects beyond that embodied in the standard of proof.

## 5 High Premium for Confession

In this section, we consider the case in which the premium for confession is high (i.e.,  $\theta_2 > u > \delta_2$ ; the "high premium case"). Since the main results of the previous section (the "low premium case") continue to hold in the high premium case, we will briefly discuss the equilibrium outcomes with and without a right to silence and highlight the effect of a right to silence on suspects' confession decisions. For a detailed analysis, the interested reader is referred to an online supplementary appendix.

Suppose that suspects do not have a right to silence. Then there does not exist an equilibrium in which both the innocent and guilty suspects always confess, because the innocent suspect could profitably deviate to speech if  $\delta_1 > u$  and because the equilibrium does not survive the D1 refinement if  $\delta_1 \leq u$ .<sup>27</sup> Moreover, the innocent suspect never confesses with positive probability in equilibrium. To see why, note that in any such equilibrium both the innocent and guilty

---

<sup>27</sup>See the supplementary appendix for a more detailed argument.

suspects strictly mix between confession and either silence or speech and therefore must obtain the same equilibrium payoff of  $u$ . But since the jury must condition its decision on the realization of the evidence to make suspects indifferent between confession and either speech or silence, the innocent suspect must earn a higher equilibrium payoff from speech or silence than the guilty suspect.<sup>28</sup> Finally, the guilty suspect confesses with positive probability in equilibrium because he obtains  $\delta_2$  if he does not confess (see Corollary 1) and could therefore profitably deviate to confessing (since  $u > \delta_2$ ). As we show in the supplementary appendix, all equilibria without a right to silence are semi-pooling: the innocent suspect either speaks or remains silent, and the guilty suspect mixes between confession and either speech or silence—depending on the innocent suspect's strategy.<sup>29</sup>

Next, suppose that suspects have a right to silence. Then the guilty suspect obtains a higher payoff from exercising his right to silence than from confessing (since  $\theta_2 > u$ ). The guilty suspect, therefore, never confesses.<sup>30</sup> Since the innocent suspect must earn a higher equilibrium payoff than the guilty suspect, the innocent suspect never confesses as well. Thus, in the presence of a right to silence, both the innocent and guilty suspects' equilibrium strategies do not depend on whether the premium for confession is low or high (recall that if the premium for confession is low, both suspects never confess as well).

As in the case in which the premium for confession is low, the jury's probability of conviction is lower if suspects have a right to silence and either the suspect is silent and the direct evidence is not incriminating or the suspect speaks and the indirect evidence contradicts the suspect's statement. Thus, the innocent suspect directly and indirectly benefits from a right to silence.<sup>31</sup> The guilty suspect as well benefits from a right to silence, since the right provides him with a better alternative to confessing. The jury's equilibrium payoff, by contrast, is lower if suspects have a right to silence. The rationale for the latter result is similar to that given in the low premium case.

Finally, note that the introduction of a right to silence does not affect the innocent suspect's (no) confession decision. This contrasts with the argument that the right induces innocent suspects to shift from (false) confession to silence. However, if the innocent suspect always speaks with and without a right to silence, he benefits from the fact that the right induces the guilty suspect to shift from confession to silence. Specifically, since  $\theta_2 > u$ , the guilty

<sup>28</sup>The result that there are no false confessions in equilibrium thus holds for any parameter values of this model.

<sup>29</sup>A high premium for confession also implies that both the innocent and guilty suspects' equilibrium payoffs are higher relative to the low premium case.

<sup>30</sup>In contrast, if  $u > \max\{\delta_2, \theta_2\}$ , the guilty suspect confesses with the same positive probability with and without a right to silence.

<sup>31</sup>That is, if the innocent suspect always remains silent in the absence of a right to silence, he also always remains silent in the presence of a right to silence (the reverse is not true)

suspect obtains a higher payoff from exercising his right to silence than from confessing. The probability with which the guilty suspect exercises his right to silence is consequently greater than the probability with which he confesses in the absence of a right to silence. The guilty suspect therefore pools with the innocent suspect (by speaking) with lower probability in the presence than in the absence of a right to silence. In the presence of a right to silence, in turn, the jury convicts with lower probability if the evidence contradicts the suspect's statement. If the innocent suspect always remains silent in the presence of a right to silence, by contrast, then his benefit from a right to silence results from the constraint imposed on the jury to not convict a silent suspect in the absence of incriminating evidence, rather than from the fact that the right induces the guilty suspect to shift from confession to silence.

## **6 Conclusion**

This article proposes a model for examining the effects of a right to silence on innocent and guilty suspects' decisions to speak or to remain silent. We show that a right to silence benefits innocent suspects by inducing them to shift from speech to silence, thereby providing them with a safer alternative to speech. Moreover, a right to silence benefits innocent suspects even if it does not alter their decision to speak or to remain silent. Specifically, a right to silence decreases the probability of wrongful conviction of innocent suspects who always remain silent or always speak irrespective of whether a right to silence exists. The article therefore provides a broad utilitarian basis for the argument that the right to silence benefits the innocent.

## Appendix

### Proposition 1(a). *(no RTS and low premium for confession)*

If  $\frac{\delta_1}{\theta_1} \geq \frac{\delta_2}{\theta_2}$ , the following strategy profile is the unique PBE: both the innocent and guilty suspects always speak. The jury always acquits if  $\varepsilon_i = v$  and always convicts if  $\varepsilon_i = nv$ , for  $\varepsilon_d = 1, 2$ . The jury's out-of-equilibrium beliefs are that a silent suspect is guilty with probability greater than  $D$ ; accordingly, the jury always convicts a silent suspect. ||

*Proof.* We will proceed by showing that the innocent suspect, the guilty suspect, and the jury cannot profitably deviate from their equilibrium strategies. We will then show uniqueness.

Given that the jury always convicts a silent suspect, neither the innocent suspect nor the guilty suspect can profitably deviate to silence. Given that both the innocent and guilty suspects speak, the jury maximizes its payoff by always convicting if  $\varepsilon_i = nv$  (by A3) and by always acquitting if  $\varepsilon_i = v$  (by A2), for  $\varepsilon_d = 1, 2$ .

To show uniqueness, observe that, in the only other equilibrium candidate, the innocent suspect always remains silent and the guilty suspect mixes between speech and silence. For the guilty suspect to be indifferent between speech and silence, the jury must always convict a silent suspect if  $\varepsilon_d = 2$ , and must acquit a silent suspect with probability  $\frac{\delta_2}{\theta_2}$  and convict the suspect with the complementary probability if  $\varepsilon_d = 1$  (because  $\theta_2 \frac{\delta_2}{\theta_2} = \delta_2$ ). In this putative equilibrium, the innocent suspect's equilibrium payoff is  $\theta_1 \frac{\delta_2}{\theta_2}$ . But  $\frac{\delta_1}{\theta_1} \geq \frac{\delta_2}{\theta_2}$  implies that  $\delta_1 \geq \theta_1 \frac{\delta_2}{\theta_2}$ . Thus, the innocent suspect can profitably deviate to speech.<sup>32</sup> This, in turn, upsets the proposed equilibrium. □

### Proposition 1(b). *(no RTS and low premium for confession)*

If  $\frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$ , the following strategy profile is the unique PBE that survives the D1 refinement: the innocent suspect always remains silent and the guilty suspect remains silent with probability  $\frac{p_1 \theta_1}{p_2 \theta_2} \frac{D}{1-D} \in (0, 1)$  and speaks with the complementary probability. The jury always acquits if  $\varepsilon_i = v$  and always convicts if  $\varepsilon_i = nv$ , for  $\varepsilon_d = 1, 2$ . The jury always convicts if the suspect is silent and  $\varepsilon_d = 2$ . The jury acquits with probability  $\frac{\delta_2}{\theta_2} \in (0, 1)$  and convicts with the complementary probability if the suspect is silent and  $\varepsilon_d = 1$ . ||

*Proof.* We will proceed by showing that the innocent suspect, the guilty suspect, and the jury cannot profitably deviate from their equilibrium strategies. We will then show uniqueness using the D1 refinement.

<sup>32</sup>Recall the tie-breaking rule whereby if  $\frac{\delta_1}{\theta_1} = \frac{\delta_2}{\theta_2}$ , the innocent suspect would rather speak.



The innocent suspect's equilibrium payoff is  $\theta_1 \frac{\delta_2}{\theta_2}$ . By deviating to speech, the innocent suspect obtains  $\delta_1$ , the probability with which the indirect evidence verifies his statement. But  $\frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$  implies  $\delta_1 < \theta_1 \frac{\delta_2}{\theta_2}$ . Thus, the innocent suspect cannot profitably deviate to speech.

Given the jury's equilibrium strategy, the guilty suspect's payoff from always speaking is  $\delta_2$ , the probability with which the indirect evidence verifies his statement. The guilty suspect's payoff from always remaining silent is  $\theta_2 \frac{\delta_2}{\theta_2} = \delta_2$ . Thus, the guilty suspect is indifferent between speech and silence. Remaining silent with probability  $\frac{p_1 \theta_1}{p_2 \theta_2} \frac{D}{1-D}$  is thus a best response (although not uniquely).<sup>33</sup>

By Bayes' rule, given that the suspect is silent and  $\varepsilon_d = 1$ , the posterior probability the suspect is guilty is  $\hat{D} = \left( p_2 \frac{p_1 \theta_1}{p_2 \theta_2} \frac{D}{1-D} \theta_2 \right) \div \left( p_2 \frac{p_1 \theta_1}{p_2 \theta_2} \frac{D}{1-D} \theta_2 + p_1 \theta_1 \right) = D$ . The jury is thus indifferent between acquitting and convicting a silent suspect if  $\varepsilon_d = 1$ . In particular, acquitting a silent suspect with probability  $\frac{\delta_2}{\theta_2}$  is a best response (although not uniquely). In addition, the jury maximizes its payoff by always convicting if  $\varepsilon_i = nv$  and by always acquitting if  $\varepsilon_i = v$  for  $\varepsilon_d = 1, 2$  (by A2 and A3, respectively).

To show uniqueness, observe that, in the only other equilibrium candidate, both the innocent and guilty suspects always speak. To support this equilibrium, the jury's out-of-equilibrium beliefs must be that if the suspect is silent, then  $\hat{D} \geq D$  for  $\varepsilon_d = 1, 2$ . We will show, however, that the jury's out-of-equilibrium beliefs fail the D1 criterion as the set of jury's acquittal probabilities for which the innocent suspect finds deviation to silence profitable is strictly greater than that for which the guilty suspect finds such deviation profitable. The jury must therefore believe that deviation to silence comes from the innocent suspect, thereby always acquitting a silent suspect. This, in turn, upsets the proposed equilibrium.

Let  $R_t \subseteq [0, 1]$  denote the set of jury's acquittal probabilities for which suspect  $t$ ,  $t = 1, 2$ , finds deviation to silence profitable, given that  $\varepsilon_d = 1$ .<sup>34</sup> Then  $R_t = (q_t, 1]$ , where  $q_t = \frac{\delta_t}{\theta_t}$  (because  $\theta_t q_t = \delta_t$ ). But  $\frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$  implies that  $q_1 < q_2$  and thus  $R_2 \subset R_1$ .  $\square$

**Proposition 2(a).** *(RTS and low premium for confession)*

*If  $\frac{\theta_1 - \theta_1}{(1 - \delta_1)\theta_1} > \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ , the following strategy profile is the unique PBE: both the innocent and guilty suspects always remain silent. The jury always acquits a silent suspect if  $\varepsilon_d = 1$  and always convicts a silent suspect if  $\varepsilon_d = 2$ . The jury's out-of-equilibrium beliefs are that the suspect is guilty with probability higher than  $D$  if  $\varepsilon_i = nv$ .  $\parallel$*

<sup>33</sup>Because  $\frac{p_2 \theta_2}{p_1 \theta_1} > \frac{D}{1-D}$  (by A3), it follows that  $\frac{p_1 \theta_1}{p_2 \theta_2} \frac{D}{1-D} \in (0, 1)$

<sup>34</sup>Note that  $\theta_2 > \delta_2$  together with  $\frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$  implies that  $\theta_1 > \delta_1$ . Thus, because  $\theta_t > \delta_t$  for  $t = 1, 2$ , both the innocent and guilty suspects find deviation to silence profitable if the jury always convicts if the suspect is silent and  $\varepsilon_d = 2$  and always acquits if the suspect is silent and  $\varepsilon_d = 1$ .

*Proof.* We will show that the innocent suspect, the guilty suspect, and the jury cannot profitably deviate from their equilibrium strategies. We will then show uniqueness.

The innocent suspect's equilibrium payoff is  $\theta_1$ . By deviating to speech, the innocent suspect obtains  $\delta_1$ , the probability with which the indirect evidence verifies his statement. But  $\theta_2 > \delta_2$  (by the assumption that the right to silence is effective) together with  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} > \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$  implies that  $\theta_1 > \delta_1$ . The innocent suspect therefore cannot profitably deviate to speech.

The guilty suspect's equilibrium payoff is  $\theta_2$ . By deviating to speech, the guilty suspect obtains  $\delta_2$ , the probability with which the indirect evidence verifies his statement. But because  $\theta_2 > \delta_2$  (by the assumption that the right to silence is effective), the guilty suspect cannot profitably deviate to speech.

Given that both the innocent and guilty suspects are silent, the jury maximizes its payoff by always convicting a silent suspect, irrespective of the realization of the direct evidence (by A3). A right to silence, however, prohibits the jury from convicting a silent suspect if the direct evidence is not incriminating (see Definition 1). The jury therefore maximizes its payoff by always acquitting a silent suspect if  $\varepsilon_d = 1$  and by always convicting a silent suspect if  $\varepsilon_d = 2$ . Finally, because only the clearly innocent suspect speaks in equilibrium, the jury maximizes its payoff by always acquitting if  $\varepsilon_i = v$ .

To show uniqueness, observe that, in the only other equilibrium candidate, the innocent suspect always speaks and the guilty suspect mixes between speech and silence. To support this equilibrium, the jury must acquit with probability  $q_2$  if the suspect speaks,  $\varepsilon_i = nv$ , and  $\varepsilon_d = 1$  so as to make the guilty suspect indifferent between speech and silence. So  $q_2$  must satisfy  $\theta_2 = \delta_2 + (1 - \delta_2)\theta_2 q_2$ ; hence,  $q_2 = \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ . This implies that, in this putative equilibrium, the innocent suspect's equilibrium payoff is  $\delta_1 + (1 - \delta_1)\theta_1 \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ . But  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} > \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$  implies that  $\theta_1 > \delta_1 + (1 - \delta_1)\theta_1 \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ ; the innocent suspect therefore can profitably deviate to silence.  $\square$

**Proposition 2(b).** (*RTS and low premium for confession*)

If  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} \leq \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ , the following strategy profile is the unique PBE that survives the D1 refinement: The innocent suspect always speaks, and the guilty suspect speaks with probability  $\frac{p_1(1 - \delta_1)\theta_1}{p_2(1 - \delta_2)\theta_2} \frac{D}{1 - D} \in (0, 1)$  and remains silent with the complementary probability. The jury always convicts if  $\varepsilon_i = nv$  and  $\varepsilon_d = 2$ . The jury acquits with probability  $\frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2} \in (0, 1)$  and convicts with the complementary probability if  $\varepsilon_i = nv$  and  $\varepsilon_d = 1$ . The jury always acquits if  $\varepsilon_i = v$ , for  $\varepsilon_d = 1, 2$ . The jury always acquits if the suspect is silent and  $\varepsilon_d = 1$  and always convicts if the suspect is silent and  $\varepsilon_d = 2$ .  $\parallel$

*Proof.* We will show that the innocent suspect, the guilty suspect, and the jury cannot profitably deviate from their equilibrium strategies. We will then show uniqueness.

The innocent suspect's equilibrium payoff is  $\delta_1 + (1 - \delta_1)\theta_1 \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ . By deviating to silence, the innocent suspect obtains  $\theta_1$ , the probability with which the direct evidence is not incriminating. But  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} \leq \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$  implies that  $\theta_1 \leq \delta_1 + (1 - \delta_1)\theta_1 \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ . Thus, the innocent suspect cannot profitably deviate to silence.

The guilty suspect's equilibrium payoff is  $\delta_2 + (1 - \delta_2)\theta_2 \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2} = \theta_2$ . The guilty suspect is thus indifferent between speech and silence. Speaking with probability  $\frac{p_1(1 - \delta_1)\theta_1}{p_2(1 - \delta_2)\theta_2} \frac{D}{1 - D}$  is thus a best response (although not uniquely).<sup>35</sup>

By Bayes rule, given that  $\varepsilon_i = nv$  and  $\varepsilon_d = 1$ , the posterior probability the suspect is guilty is  $\hat{D} = \left( p_2 \frac{p_1(1 - \delta_1)\theta_1}{p_2(1 - \delta_2)\theta_2} \frac{D}{1 - D} (1 - \delta_2)\theta_2 \right) \div \left( p_2 \frac{p_1(1 - \delta_1)\theta_1}{p_2(1 - \delta_2)\theta_2} \frac{D}{1 - D} (1 - \delta_2)\theta_2 + p_1(1 - \delta_1)\theta_1 \right) = D$ . It follows that the jury is indifferent between acquitting and convicting if  $\varepsilon_i = nv$  and  $\varepsilon_d = 1$ . In particular, convicting with probability  $\frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$  is a best response (although not uniquely).

To show uniqueness, observe that, in the only other equilibrium candidate, both the innocent and guilty suspects always remain silent. To support this equilibrium, the jury's out-of-equilibrium beliefs must be that if the suspect speaks and  $\varepsilon_i = nv$ , then  $\hat{D} \geq D$  for  $\varepsilon_d = 1, 2$ . We will show, however, that the jury's out-of-equilibrium beliefs fail the D1 criterion.

Let  $R_t \subseteq [0, 1]$  denote the set of jury's acquittal probabilities for which suspect  $t$ ,  $t = 1, 2$ , finds deviation to speech profitable, given that  $\varepsilon_i = nv$  and  $\varepsilon_d = 1$ .<sup>36</sup> First, suppose  $\delta_1 > \theta_1$ . Then,  $R_1 = [0, 1]$  and  $R_2 \subset [0, 1]$  (because  $\theta_2 > \delta_2$ ); therefore  $R_2 \subset R_1$ . Next, suppose  $\delta_1 \leq \theta_1$ . Then  $R_1 = [t_1, 1]$  and  $R_2 = (t_2, 1)$ , where  $q_t = \frac{\theta_t - \delta_t}{(1 - \delta_t)\theta_t}$  (because, for  $t = 1, 2$ ,  $\theta_t = \delta_t + (1 - \delta_t)\theta_t q_t$ ). But  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} \leq \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$  implies that  $q_1 \leq q_2$  and therefore  $R_2 \subset R_1$ .  $\square$

### Proposition 3.

*Proof.* Parts (a) and (b) follow directly from Propositions 1 and 2. To prove part (d) (if  $\frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$  then  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} > \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ ), observe that  $\frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$  together with  $\frac{1}{1 - \delta_1} > \frac{1}{1 - \delta_2}$  implies that  $\frac{1}{1 - \delta_1} (1 - \frac{\delta_1}{\theta_1}) > \frac{1}{1 - \delta_2} (1 - \frac{\delta_2}{\theta_2})$ , which simplifies to  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} > \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ . Finally, part (c) follows from part (d) and Propositions 1 and 2.  $\square$

### Proposition 4. (equilibrium payoffs with and without RTS and low premium for confession)

(a) Both the innocent and guilty suspects' equilibrium payoffs are higher with RTS than without RTS.

(b) The jury's equilibrium payoff is higher without RTS than with RTS.  $\parallel$

<sup>35</sup>Because  $\frac{p_1\theta_1}{p_2\theta_2} \frac{D}{1 - D} < 1$  (by A3) and  $\delta_1 > \delta_2$ , it follows that  $\frac{p_1(1 - \delta_1)\theta_1}{p_2(1 - \delta_2)\theta_2} \frac{D}{1 - D} \in (0, 1)$ .

<sup>36</sup>Note that both the innocent and guilty suspects find deviation to speech profitable if the jury always convicts if  $\varepsilon_i = nv$  and  $\varepsilon_d = 2$  and always acquits if  $\varepsilon_i = nv$  and  $\varepsilon_d = 1$  (because  $\delta_t + (1 - \delta_t)\theta_t > \theta_t$  for  $t = 1, 2$ ).

*Proof.* Part (a) follows directly from Corollaries 1 and 2. To prove part (b), consider the following three cases.

Case (i):  $\frac{\delta_1}{\theta_1} \geq \frac{\delta_2}{\theta_2}$  and  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} \leq \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ : The jury's equilibrium payoff in a pooling equilibrium without RTS is  $-[p_1(1 - \delta_1)D + p_2\delta_2(1 - D)]$ , where  $p_1(1 - \delta_1)D$  is the jury's expected cost of wrongful conviction; and  $p_2\delta_2(1 - D)$  is the jury's expected cost of wrongful acquittal. Similarly, the jury's equilibrium payoff in a semi-pooling equilibrium with RTS is  $-\{p_1(1 - \delta_1)D + p_2[\theta_2(1 - x) + \delta_2x](1 - D)\}$ , where  $x = \frac{p_1(1 - \delta_1)\theta_1}{p_2(1 - \delta_2)\theta_2} \frac{D}{1 - D}$ <sup>37</sup>. Now, because  $\theta_2 > \delta_2$ , it follows that  $-[p_1(1 - \delta_1)D + p_2\delta_2(1 - D)] > -\{p_1(1 - \delta_1)D + [\theta_2(1 - x) + \delta_2x]p_2(1 - D)\}$ .

Case (ii):  $\frac{\delta_1}{\theta_1} \geq \frac{\delta_2}{\theta_2}$  and  $\frac{\theta_1 - \delta_1}{(1 - \delta_1)\theta_1} > \frac{\theta_2 - \delta_2}{(1 - \delta_2)\theta_2}$ : The jury's equilibrium payoff in a pooling equilibrium without RTS is  $-[p_1(1 - \delta_1)D + p_2\delta_2(1 - D)]$ . The jury's equilibrium payoff in a pooling equilibrium with RTS is  $-[p_1(1 - \theta_1)D + p_2\theta_2(1 - D)]$ . Subtracting the latter expression from the former gives  $-[p_1(\theta_1 - \delta_1)D + p_2(\delta_2 - \theta_2)(1 - D)]$ . Now,  $\frac{\delta_1}{\theta_1} \geq \frac{\delta_2}{\theta_2}$  implies  $1 - \frac{\delta_1}{\theta_1} \leq 1 - \frac{\delta_2}{\theta_2}$ , which implies that  $\frac{\theta_2 - \delta_2}{\theta_1 - \delta_1} \geq \frac{\theta_2}{\theta_1}$ . Because  $\frac{p_2\theta_2}{p_1\theta_1} > \frac{D}{1 - D}$  (by A2) and  $\frac{\theta_2 - \delta_2}{\theta_1 - \delta_1} \geq \frac{\theta_2}{\theta_1}$ , it follows that  $\frac{p_2(\theta_2 - \delta_2)}{p_1(\theta_1 - \delta_1)} > \frac{D}{1 - D}$ . Thus  $-[p_1(\theta_1 - \delta_1)D + p_2(\delta_2 - \theta_2)(1 - D)] < 0$ .

Case (iii):  $\frac{\delta_1}{\theta_1} < \frac{\delta_2}{\theta_2}$ : the jury's equilibrium payoff in a semi-pooling equilibrium without RTS is  $-\{p_1(1 - \theta_1)D + p_2[\theta_2x + \delta_2(1 - x)](1 - D)\}$ , where  $x = \frac{p_1\theta_1}{p_2\theta_2} \frac{D}{1 - D}$ <sup>38</sup>. The jury's equilibrium payoff in a pooling equilibrium with RTS is  $-[p_1(1 - \theta_1)D + p_2\theta_2(1 - D)]$ . Because  $\theta_2 > \delta_2$  (by the assumption that the right to silence is effective), it follows that  $-\{p_1(1 - \theta_1)D + p_2[\theta_2x + \delta_2(1 - x)](1 - D)\} > -[p_1(1 - \theta_1)D + p_2\theta_2(1 - D)]$ .  $\square$

<sup>37</sup>To see why, recall that the jury always convicts if  $\varepsilon_i = nv$  and  $\varepsilon_d = 2$  and is indifferent between acquitting and convicting if  $\varepsilon_i = nv$  and  $\varepsilon_d = 1$ . We can thus assume the jury always convicts if  $\varepsilon_i = nv$ , for  $\varepsilon_d = 1, 2$ .

<sup>38</sup>To see why, recall that the jury is indifferent between acquitting and convicting a silent suspect if  $\varepsilon_d = 1$ . We can thus assume the jury always acquits a silent suspect if  $\varepsilon_d = 1$ .

## References

- [1] Amar, A. R. *The Constitution and Criminal Procedure: First Principles*. New Haven: Yale University Press, 1997.
- [2] Bentham J. "A Treatise on Judicial Evidence," in M. Dumont (ed.) *The Works of Jeremy Bentham*. New York: Russell and Russell Inc., 1825.
- [3] Bucke, T., Street, R., and Brown, D. "The Right to Silence: The Impact of the Criminal Justice and Public Order Act 1994." *Home Office Research Study 199* (London), 2000.
- [4] Cho, I-K. and Kreps, D. M. "Signaling games and stable equilibria." *Quarterly Journal of Economics*, Vol. 52 (1987), pp. 179-221.
- [5] Coldrey, J. "The Right to Silence: Should it be Curtailed or Abolished?" *Anglo-American Law Journal*, Vol. 20 (1991), pp. 51-62.
- [6] Crawford, V. and Sobel J. "Strategic Information Transmission," *Econometrica*, Vol. 50 (1982), pp 1431-1451.
- [7] Davies, G. "The Limits of the Right to Silence," Available at <http://www.ajia.org.au/ctr/DAVIES.RTF>.
- [8] Dershowitz, A. M. *Is There a Right to Remain Silent?* Oxford University Press, 2008.
- [9] Dolinko, D. "Is There a Rationale for the Privilege Against Self-Incrimination?" *University of California Los Angeles Law Review*, Vol. 33 (1986), pp. 1063-1148.
- [10] Feddersen, T. and Pesendorfer W. "Convicting the Innocent: The Inferiority of Unanimous Jury Verdicts under Strategic Voting." *American Political Science Review*, Vol. 92 (1998), pp. 2335.
- [11] Feltovich, N., Harbaugh, R., and To, T. "Too Cool for School? Signalling and Countersignalling." *RAND Journal of Economics*, Vol. 33 (2002), pp. 630-649.
- [12] Friendly, H. J. "The Fifth Amendment Tomorrow: The Case for Constitutional Change." *University of Cincinnati Law Review*, Vol. 27 (1968), pp. 671-726.
- [13] Gerstein, R.S. "Privacy and Self-Incrimination." *Ethics*, Vol. 80 (1970), pp. 87-101.
- [14] Greer, S. "The Right to Silence: A Review of the Current Debate." *The Modern Law Review*, Vol. 53 (1990), pp. 709-730.

- [15] Greer, S. "The Right to Silence, Defence Disclosure, and Confession Evidence." *Journal of Law and Society*, Vol. 21 (1994), pp. 102-118.
- [16] Grossman, S. J. "The Information Role of Warranties and Private Disclosure About Information Quality." *Journal of Law and Economics*, Vol. 24 (1981), pp. 461-483.
- [17] Mialon, H. "An Economic Theory of the Fifth Amendment." *RAND Journal of Economics*, Vol 36 (2005), pp. 833-848.
- [18] Milgrom, P. "Good News and Bad News: Representation Theorems and Applications." *Bell Journal of Economics*, Vol. 12 (1981), pp. 380-391.
- [19] Milgrom, P. and Roberts, J. "Relying on the Information of Interested Parties." *RAND Journal of Economics*, Vol. 17 (1986), pp. 18-32.
- [20] *Murphy v. Waterfront Comm'n of New York Harbor*, 378 U.S. 52 (1964).
- [21] Seidmann, D. "The Effects of the Right to Silence." *Review of Economic Studies*, Vol. 72 (2005), pp. 593-614.
- [22] Seidmann, D. and Stein, A. "The Right to Silence Helps the Innocent: A Game-theoretic Analysis of the Fifth Amendment Privilege." *Harvard Law Review*, Vol. 114, pp. 430-510.
- [23] Schulhofer, S. J. "Some Kind Words for the Privilege Against Self-Incrimination." *Valparaiso University Law Review*, Vol. 26 (1991), pp. 311-336.
- [24] *Ullmann v. United States*, 350 U.S. 422 (1956).