The Order of Presentation in Trials: Plaintive Plaintiffs*

Elena D'Agostino † and Daniel J. Seidmann ‡

November 19, 2021

Abstract

Is it better to present evidence first or second in trials if witnesses cannot lie, and the litigants share all available witnesses? We address this question by defining preferences over playing games via their equilibrium correspondences. Exploiting this partial ordering over games, we show that litigants cannot prefer to lead, but can prefer to follow; the judge/jury may also prefer some litigant to lead, but only if the litigants each prefer to follow. Allowing a litigant to choose whether to lead after observing the available witnesses does not benefit either that litigant or the judge/jury.

1. Introduction

In common law jurisdictions, defendants (D) present evidence to the judge/jury (J) after the plaintiff/prosecution (P); in Italian criminal trials, D can suggest the order of presentation. The common law rule is conventionally explained by the presumption of innocence (Roberts and Zuckerman, 2010 Ch 6.3). However, this argument does not establish that D gains by presenting second (*following*) or that J prefers an order. Explanations in the literature seem to turn on some or all players' naivety. In mock jury trials, experimental subjects hear given evidence in two different orders: the follower is implicitly supposed not to respond to the leader's evidence.[1] In Damaska (1973), J apparently ignores the follower's ability to respond to the leader's evidence.[2] We take a different approach, which

*We are grateful to audiences in Alghero, Bocconi, Glasgow, Haifa, Jerusalem, Leicester, Messina, Nottingham, Paris and Princeton for their comments, and particularly to Ricardo Alonso, Vincent Anesi, Alon Harel, Navin Kartik, Fredric Koessler, Santiago Oliveros, Ariel Porat and Adrien Vigier for their helpful suggestions.

†Department of Economics, University of Messina, Messina, 98123, Italy; edagostino@unime.it

‡School of Economics, University of Nottingham, Nottingham NG7 2RD, England; daniel.seidmann@nottingham.ac.uk

[1] See Zamir and Teichman (2018) Ch 15 for a literature review and Engel et al. (2020) for a recent contribution. The evidence is mixed.

[2] Any advantage which the prosecution may gain from anchoring J's beliefs "pales to insignificance when assessed against the disadvantage of having to argue before knowing how the prosecution's case will develop." (fn 48, p.529).

builds on the observation that the identity of the leader does not affect payoffs in equilibrium if litigants can directly prove factual innocence or guilt. As we demonstrate, the familiar unravelling argument implies that there would then be no miscarriages of justice, irrespective of the order because J draws sophisticated inferences from the follower's response. The common law order does not then benefit D. In light of this result, we focus on games in which litigants cannot always directly prove factual innocence or guilt: that is, on games with partial provability. Given the common law order, J may not know whether D has failed to directly prove factual innocence because D is factually guilty or because the requisite witnesses are unavailable. We show that the common law order benefits D in the following sense: D cannot prefer to always lead, but can prefer to always follow. Furthermore, D cannot prefer to choose the order after observing the available evidence than to always follow, but may prefer to always follow.

We obtain the first set of results by analyzing a pair of games, each played by D, P, J and Nature, which differ according to the identity of the leader, and which we call *fixed order games*. Nature starts each game by selecting a state and the witness set at that state, and reveals both to the litigants alone. A *witness* is a nonempty subset of states which contains the true state (that is, a verifiable message); and the *witness set* is the collection of witnesses commonly available to the litigants at the realized state. The leader presents some or all of the available witnesses to J, and the follower responds to the leader's evidence by selecting from the realized witness set or presenting no evidence. J ends the game by acquitting or convicting after observing the witnesses presented by the two litigants, without knowing whether all available witnesses have been presented. D and P respectively want J to acquit and to convict at every state, while J seeks to avoid miscarriages of justice.

We address the advantages of an order of presentation by comparing perfect Bayesian equilibria (and thereby equilibrium payoff vectors = *outcomes*) in two games whose only difference is the leader's identity. As each game typically has multiple outcomes (and must have a separating equilibrium), we construct players' ex ante preferences over the order by comparing sets of outcomes. We say that a player prefers an order of presentation if it expects (before the state and the witness set are realized) to be at least as well off at every equilibrium of the game with that order as at every equilibrium of the game with the other order, and better off at some equilibrium. This criterion yields a partial ordering over pairs of games.

We first show that litigants cannot prefer to lead, just as in games where litigants can directly prove factual innocence or guilt; but, in contrast to those games, the unravelling argument no longer applies. Instead, we take an equilibrium of a game which prescribes J to reach the leader's favored verdict at some witness sets, and then use this equilibrium to construct an equilibrium of the other game which prescribes J to observe the same witnesses and reach the same verdict at those witness sets. Our criterion then precludes a litigant from preferring to lead.

We then demonstrate that following may advantageously allow a litigant to ensure that J observes the same evidence at different realized witness sets. Specifically, imagine that all evidence available when some witness set (W) is realized is also available when another witness set (W') is realized; that J would reach litigant l's favored verdict if uncertain whether W or W' were realized; and that it would reach l's disfavored verdict if it knew that W was realized. If l follows then it can condition the evidence it presents on that presented by the leader; and it can ensure that J is uncertain because $W \subset W'$ implies that the leader cannot prove that W was realized. In sum, Damaska's (1973) claim that the common law order benefits D is true when J is sophisticated enough to recognize that the follower can respond to the leader's evidence.

We then ask whether D or J could prefer D to choose the order after observing the witness set (as in Italian trials) over playing either fixed order game? We address this question by characterizing equilibria of *ex post order games,* where D chooses the order at each witness set, and play then follows the rules of the ensuing fixed order game. We use the criterion above to show that D cannot prefer to play the ex post order game over always following, but that the converse is possible; and that D can prefer to always lead over playing the ex post order game. These results run counter to the conjecture that choosing the order is advantageous. We also show J cannot prefer D to choose ex post than either fixed order game, relying on the fact that every outcome of each fixed order game is an outcome of the ex post order game. This result is also striking because D's choice of order can signal the witness set to J in ex post order games.

We contribute to the literature on sequential debates with partial provability. Lipman and Seppi (1995) show that fixed order-like games have equilibria which prescribe the Receiver to learn the state when Senders can disprove any false cheap talk claims about the state. In Glazer and Rubinstein (2001), two Senders with different witness sets are each constrained to present a single witness; they show that the Receiver earns as much in an equilibrium of a game where Senders present in sequence as in the Receiver-optimal mechanism. In our model, partial provability turns on the witnesses available at different states; and we show that J may learn the witness set in an equilibrium despite partial provability. More significantly, the question we ask is novel in this literature, and leads us to compare each game's equilibrium correspondence.

We present and analyze our model of fixed order games in Section 2, and of ex post order games in Section 3, concluding in Section 4. We provide proofs in the Appendix, and extend our results to games in which litigants may have different available witnesses at each state in an online Appendix.

2. Fixed order games

Section 2.1 presents our model of fixed order games, which we discuss in Section 2.2. We define preferences over the order in Section 2.3, and provide results in Section 2.4.

2.1. Model

We model trials as games in which two litigants, D and P, sequentially present some of the available witnesses to J. We consider two games, in each of which one of the litigants is designated as the *leader* (litigant L), and the other litigant as the *follower* (litigant F): each designation defining an *order* (*of presentation*). We denote a generic litigant by l, which we sometimes treat as an element of $\{D, P\}$, and at other times as an element of $\{L, F\}$; the interpretation will be clear in context. We write $-l$ for the other litigant.

Let $\mathbf{S}$ be a finite collection of *states*, with generic element s. In a subset of states, denoted $\mathbf{G}$, D is *factually guilty*; D is *factually innocent* in any other state. A *witness* (denoted w) at s is a subset of $2^{\mathbf{S}}\backslash(\mathbf{S} \cup \emptyset)$ which contains s. A *witness set* (W) at s is any nonempty collection of witnesses at s. We refer to any nonempty subset $e \subseteq W$ as *evidence* contained in W. In particular, we refer to $\widehat{W} \equiv \cup(w \in W)$ as the *full report* at W; so no distinct witness sets have the same full report. We say that a collection of witnesses at s (say, e) *directly proves* any subset $S \subset \mathbf{S}$ if $\cup_{s \in w, w \in e} e \subseteq S$.

A fixed order game (with one litigant designated as leader) has the following time line:

Round 0 Nature chooses a state $s \in \mathbf{S}$ with probability $p(s) > 0$, and a witness set W at s with probability $\pi(W|s)$; we refer to s and W as the *realization pair*, which we denote $[W, s]$, and write $\mathbf{W}$ for $\cup_{s \in \mathbf{S}}\{W : \pi(W|s) > 0\}$. We write $\Pi(s|W)$ for the posterior probability of state s, conditional on Nature choosing witness set W. Nature reveals $[W, s]$ to both litigants, but not to J.

Round 1 Litigant L chooses (*presents*) any subset of $2^W\backslash\phi$; we refer to the set of chosen witnesses as L's *evidence*, which we denote by e_L.

Round 2 After observing e_L, litigant F presents any subset of 2^W, where we call presenting no witness *passing*. We refer to F's choice as its *evidence*, which we denote by e_F.

Round 3 After observing the *evidence pair* $\{e_L, e_F\}$, J ends the game by reaching a *verdict* (v), deciding whether to acquit (α) or convict (γ).

We adopt the convention that $e_L \cup e_F \equiv e_L$ if the follower passes. We write $\mathbf{W}(e_L \cup e_F)$ for the witness sets in $\mathbf{W}$ which contain $e_L \cup e_F$; so $e \subset e'$ implies that $\mathbf{W}(e') \subseteq \mathbf{W}(e)$.

A strategy for the leader lists the evidence it presents at each $[W, s] \in \mathbf{W} \times \mathbf{S}$; a strategy for the follower lists the evidence it presents at each $[W, s]$, given e_L; and a strategy for J lists an element of $\{\alpha, \gamma\}$ at each evidence pair.

We suppose that the litigants only care about the verdict: at every $[W, s]$, D [resp. P] earns 1 [resp. 0] if J acquits and 0 [resp. 1] if J convicts. By contrast, J loses $1 - d$ if it acquits at any state $s \in \mathbf{G}$, loses d if it convicts at any state in $\mathbf{S}\backslash\mathbf{G}$, and makes no loss otherwise, where $d \in (0, 1)$.

The strategy sets, payoffs and J's beliefs about $[W, s]$ after observing any evidence pair define a *fixed order game*, which we denote by $\Gamma_{L,F}$. If D [resp. P] is the leader then we denote the game by $\Gamma_{D,P}$ [resp. $\Gamma_{P,D}$].

We solve each game by characterizing those pure strategy perfect Bayesian equilibria at which J's beliefs after observing $\{e_L, e_F\}$ assign probability 1 to $[W, s]$ which satisfy $W \in \mathbf{W}(e_L \cup e_F)$, $\pi(W|s) > 0$ and $s \in e_L \cap e_F$ (off as well as on the path): conditions which we refer to as *feasibility*. We call such strategy combinations and beliefs *equilibria*.

We refer to the payoff triple prescribed by an equilibrium at each $[W, s]$ of a game as an *outcome*, and the set of outcomes as the *outcome correspondence*. We say that an equilibrium *separating* if it prescribes different evidence pairs at different witness sets.

The distribution of $[W, s]$ determines each player's expected payoff at a given strategy combination. To simplify exposition, we assume that no player earns the same (expected) payoff at any pair of strategy combinations which prescribe different verdicts at any $[W, s]$.

This assumption imposes generic conditions on the distribution of $[W, s]$; we will refer to it as the *genericity condition*.

It will prove useful to provide notation which represents the players' preferences over verdicts at each W. As litigants' payoffs only depend on the verdict, we say that D's [resp. P's] *favored verdict* is acquittal [resp. conviction], and write litigant l's favored verdict as v_l. By contrast, J seeks to avoid convicting in factually innocent states and acquitting in factually guilty states. We write $W \in \mathbf{W}^\alpha$ if

$$(1-d)\sum_{s\in\mathbf{G}}\Pi(s|W) < d\sum_{s\notin\mathbf{G}}\Pi(s|W),$$

and $W \in \mathbf{W}^\gamma$ if the reverse inequality holds at W. W is therefore in $\mathbf{W}^v$ if J strictly prefers verdict v when it knows W. We refer to an acquittal at $W \in \mathbf{W}^\gamma$ as a *wrongful acquittal*, a conviction at $W \in \mathbf{W}^\alpha$ as a *wrongful conviction*, and to either such verdict as a *miscarriage of justice*.[3] We simplify exposition by supposing that $\mathbf{W} = \mathbf{W}^\alpha \cup \mathbf{W}^\gamma$. We say that evidence e *induces* verdict v if $\mathbf{W}(e) \subseteq \mathbf{W}^v$, and that an outcome is separating when J acquits at W if and only if $W \in \mathbf{W}^\alpha$.

2.2. Discussion of the model

Litigants may be required to disclose available witnesses to each other before a common law trial. Our assumption that litigants share a common witness set captures the symmetric discovery rules in civil trials (Subrin, 1998).

Trials with one D and one P contain the following stages: 1) P and then D make opening statements, which must be announcements of the evidence to be presented; 2) P calls witnesses, who are cross-examined by D (speeches are not allowed); 3) D can present a motion to end the trial and acquit, on the grounds that P has not met its burden of proof; 4) If the motion is dismissed then D calls witnesses, who are cross-examined by P (speeches are again not allowed);[4] 5) P and then D make closing statements, which remind J of the evidence, and can suggest interpretations thereof; 6) J reaches a verdict. Our model focuses on stages 2, 4 and 6. We capture the burden of proof (stage 3) by assuming that the leader alone may not pass.

We think of states as describing the facts at issue; so D is factually guilty at every state in $\mathbf{G} \subseteq \mathbf{S}$. We have assumed that both litigants observe the state; but, as we explain below, nothing turns on this assumption.

Our assumption that every witness at state s contains s means that any available witness is a verifiable message about the state; our supposition that $w \in 2^{\mathbf{S}}\backslash(\mathbf{S} \cup \emptyset)$ precludes cheap talk. The model incorporates partial provability in the sense that $\widehat{W}$ might not directly prove factual innocence or guilt.

Parameter d captures the standard of proof, which is beyond reasonable doubt in criminal cases, and the balance of probabilities in civil cases.

[3] We abuse common language by defining miscarriages of justice in terms of witness sets rather than states.

[4] P may then be allowed, in unusual circumstances, to call witnesses to rebut surprise claims made by D's witnesses.

2.3. Preferences over the order

Our main results will describe the conditions under which a player prefers to lead or to follow. We interpret this as a question about the player's ex ante preferences over outcomes: that is, before knowing $[W, s]$. Accordingly, we say that a player strictly prefers one outcome over another if its expected payoff is higher; so the ordering over outcome triples is transitive. The genericity condition implies that the ordering over pairs of distinct outcomes is complete.

Each game typically has several outcomes, so the selection of equilibria could determine preference over the order. Refinements based on forward induction do not reduce the multiplicity of outcomes because each litigant has the same preference ordering over verdicts at every $[W, s]$.[5] Accordingly, we now provide a criterion for preference over multiple outcomes which does not rely on selection arguments.

Write $\omega_{L,F}$ for the outcome correspondence of $\Gamma_{L,F}$. We say that *player* $Q \in \{D, P, J\}$ *prefers* $\Gamma_{D,P}$ over $\Gamma_{P,D}$ (or *prefers* D *to lead*) if $\omega_{D,P}$ and $\omega_{P,D}$ are nonempty (both games have equilibria) and player Q

Condition 1 Weakly prefers every outcome in $\omega_{D,P}$ over every outcome in $\omega_{P,D}$; and

Condition 2 Strictly prefers some outcome in $\omega_{D,P}$ over some outcome in $\omega_{P,D}$.

Analogous conditions define a preference for P to lead. As litigants have opposing preferences over the verdict, P prefers $\Gamma_{L,F}$ over $\Gamma_{F,L}$ if and only if D prefers $\Gamma_{F,L}$ over $\Gamma_{L,F}$.

Conditions 1 and 2 define a partial ordering over games. In particular, the genericity condition precludes any player preferring a game if $\omega_{D,P}$ and $\omega_{P,D}$ share two or more distinct outcomes.

2.4. Results

We start by providing a result of independent interest, which we will exploit below.

Proposition 1

- **a)** *Every fixed order game has a separating equilibrium;*
- **b)** *If $W \nsubseteq W'$ for every pair of witness sets $W \neq W'$ in $\mathbf{W}$ then every outcome of a fixed order game is separating.*

We prove part a) by construction (in the Appendix). The construction, which only depends on $[W, s]$, exploits the facts that $\widehat{W} \neq \widehat{W'}$ if $W \neq W'$, and that one litigant wants J to learn W. The premise of part b) includes games in which litigants can directly prove factual innocence or guilt at every state. Part b) follows from the observation that a litigant could otherwise profitably deviate to presenting $\widehat{W}$.

Proposition 1a) implies that each fixed order game has an outcome. We can therefore use the criterion introduced in Section 2.3 to consider preferences over the order of

[5] Truth-leaning equilibrium (Hart et al., 2017) selects the separating equilibrium which prescribes the litigant who *disfavors* the verdict at W to present $\widehat{W}$. The latter condition seems particularly implausible in trials.

presentation. Proposition 1a) also implies that a player can only prefer $\Gamma_{l,-l}$ over $\Gamma_{-l,l}$ if it prefers any nonseparating outcome of $\Gamma_{l,-l}$ over the separating outcome, and the latter over any nonseparating outcome of $\Gamma_{-l,l}$.

If the premise of Proposition 1b) holds then no player prefers an order (because Condition 2 fails). Our main result in this section asserts that this property does not fully generalize:[6]

Theorem 1 *In fixed order games:*

a) *Litigants cannot prefer to lead;*

b) *Litigants can prefer to follow; and*

c) *J can prefer an order, but only prefers an order if litigants prefer to follow.*

Part a) follows from

Lemma *If $\Gamma_{L,F}$ has an equilibrium which prescribes v_L (the leader's favored verdict) at witness sets $\{W^i\}$ then $\Gamma_{F,L}$ has an equilibrium which prescribes v_L at every $W \in \{W^i\}$.*

Let X denote the equilibrium of $\Gamma_{L,F}$. X partitions the witness sets at which it prescribes v_L into collections of witness sets, say $\{\mathbf{V}^i\}$, at each of which it prescribes J to observe the same evidence pair. We prove Lemma by constructing an equilibrium of $\Gamma_{F,L}$ which prescribes J to observe the same evidence pair at each witness set in $\mathbf{V}^i$, and prescribes both litigants to present $\widehat{W}$ at every $W \notin \{\mathbf{V}^i\}$. This equilibrium therefore prescribes J to reach v_L at every witness set where X prescribes v_L.[7] Lemma and transitivity of preferences over outcomes imply part a).

We prove part b) with the following example:

Example 1 *There are four states: $\mathbf{S} = \{i^1, i^2, i^3, g\}$, and the defendant is only factually guilty in state g. There are three witnesses: $w^1 = \{i^1, i^2, g\}$, $w^2 = \{i^2, i^3, g\}$, $w^3 = \{g\}$ and four witness sets: $W^1 = \{w^1\}$, $W^2 = \{w^2\}$, $W^{12} = \{w^1, w^2\}$, $W^{123} = \{w^1, w^2, w^3\}$. The conditional distribution of witness sets is $\pi(W^1|i^1) = \pi(W^{12}|i^2) = \pi(W^2|i^3) = \pi(W^{123}|g) = 1$; $\{p(s)\}_{s\in\mathbf{S}}$ and d satisfy*

$$\max\{\frac{p(g)}{p(g)+p(i^2)}, \frac{p(g)}{p(g)+p(i^3)}\} < d < \frac{p(g)}{p(g)+p(i^1)}.$$

Witness sets satisfy $W^1 \subset W^{12} \subset W^{123}$ in Example 1; and w^3 induces conviction. As $p(i^2)$ and $p(i^3)$ are large enough, equilibria in either game can only prescribe a miscarriage of justice if J observes the same evidence pair at W^1 and W^{123}, and a different evidence pair at W^{12}.

---

[6] We say a player *can* prefer an order if it prefers that order in generic examples.

[7] Lemma implies that each litigant is at least as well off in the best outcome when it follows as in the best outcome when it leads (irrespective of whether litigants prefer to follow).

An equilibrium of $\Gamma_{D,P}$ prescribes D to present w^1 at W^{123} and a wrongful conviction at W^1: D cannot profitably deviate at W^{123} because P would respond by presenting w^3. By contrast, P must present w^3 at W^{123} if it leads: no equilibrium of $\Gamma_{P,D}$ can prescribe J to observe the same evidence pairs at W^1 and at W^{123} because P could then profitably deviate to also presenting w^1 at W^{12}. Consequently, $\omega_{P,D}$ is the separating outcome, whereas $\omega_{D,P}$ also contains an outcome with a wrongful conviction; so both litigants prefer to follow, proving part b).

Proposition 1a) states that both games have a separating outcome. As J prefers the separating over every other outcome, it prefers $\Gamma_{l,-l}$ over $\Gamma_{-l,l}$ if and only if $\omega_{l,-l}$ is the separating outcome, but $\omega_{-l,l}$ contains another outcome (as in Example 1). Lemma implies that these conditions can only hold if the wrongful verdicts all favor the follower, proving part c).

We have assumed that litigants observe the state. Fixed order games may have equilibria which prescribe J to observe different evidence pairs at $[W, s]$ and $[W, s'] : s \neq s'$; but these equilibria must prescribe J to reach the same verdict because litigant payoffs only depend on the verdict. Consequently, the outcome correspondence of fixed order games is state-independent; and Theorem 1 would still hold if one or both litigants only observed W.[8] No arguments used in the proof of Theorem 1 (or indeed of any later results) turn on the leader's burden of proof.[9]

3. Ex post order games

In Italian criminal trials, D can suggest the order; and the Supreme Court's ruling in *United States* v *Mezzanatto* (1995) may allow D to choose the order. In this section, we analyze an *ex post order game* (denoted Γ), in which D chooses the order after observing $[W, s]$; and the time line then follows Rounds 1-3 of the fixed order game with the chosen order (so the other players observe D's choice). We analyze Γ by characterizing its equilibria, which now require specification of J's beliefs after D has chosen an order. We then apply the criterion introduced in Section 2.3 to ask whether players can prefer to play Γ over either fixed order game? In ex post order games, D's choice of order can signal W; and choosing different orders at witness sets $W' \subset W$ allows J to reach different verdicts at W and W'.

Our next result will be central to our analysis:

Proposition 2 *Every outcome of a fixed order game is an outcome of the ex post order game.*

We prove Proposition 2 by taking each equilibrium of $\Gamma_{L,F}$ and constructing an equilibrium of Γ which prescribes D to choose litigant L to lead at every witness set and then play according to that equilibrium of $\Gamma_{L,F}$. J punishes D for choosing the other order by

[8] This argument will imply that results in the next section do not rely on the number of litigants who observe the state.

[9] This property does not generalize to games in which litigants may have different available witnesses: cf. Section 2.1 in the online Appendix.

only subsequently acquitting at W when $\widehat{W}$ induces acquittal. This threat deters D from choosing the other order because every equilibrium of $\Gamma_{L,F}$ prescribes J to acquit at W when $\widehat{W}$ induces acquittal.

Proposition 2 implies that D chooses to lead at every witness set in an equilibrium of Γ, even though it never prefers $\Gamma_{D,P}$ over $\Gamma_{P,D}$ (cf. Theorem 1a)). Furthermore, Propositions 1 and 2 jointly imply that Γ has a separating outcome. The proof of our next result includes an example which demonstrates that ex post order games may have outcomes which are not in $\omega_{D,P} \cup \omega_{P,D}$.

Our main result in this section is

Theorem 2

a) *D cannot prefer Γ over $\Gamma_{P,D}$;*

b) *D can prefer each fixed order game over Γ;*

c) *J cannot prefer Γ over either fixed order game, but can prefer a fixed order game over Γ.*

The proof of part a) turns on the observation (using Proposition 2) that D can only prefer Γ over $\Gamma_{P,D}$ if $\omega_{P,D}$ consists of the separating outcome and Γ has an equilibrium which prescribes a wrongful acquittal at some witness set. We exploit the latter condition to construct an equilibrium of $\Gamma_{P,D}$ which also prescribes wrongful acquittals.[10] Example 1 illustrates how D can prefer $\Gamma_{P,D}$ over Γ. The outcomes in Γ are then the union of outcomes in the two fixed order games: that is, the separating outcome and the outcome in $\Gamma_{D,P}$ with a wrongful conviction. As D prefers $\Gamma_{P,D}$ over $\Gamma_{D,P}$, it also prefers $\Gamma_{P,D}$ over Γ. We prove that D can prefer $\Gamma_{D,P}$ over Γ by providing an example where both fixed order games only have the separating outcome, whereas Γ has a nonseparating equilibrium. This equilibrium prescribes D to lead at one witness set and J to acquit after observing some evidence pair, and P to lead at other witness sets and J to convict after observing the evidence pair at some other witness sets, including a witness set in $\mathbf{W}^{\alpha}$. The example therefore demonstrates that D's option of choosing the order may be disadvantageous, contrary to a natural conjecture.

If J were to prefer Γ over $\Gamma_{L,F}$ then $\omega_{L,F}$ would have to be the separating outcome, else Proposition 2 would imply that the two games share two distinct outcomes, precluding a preference between them; and J cannot prefer Γ if $\omega_{L,F}$ is the separating outcome. On the other hand, in Example 1, J prefers $\Gamma_{P,D}$ over Γ because the ex post order game has an equilibrium which prescribes a wrongful conviction, proving part c). This result is striking because play in Γ allows D to signal the witness set.

4. Conclusion

We have studied players' preferences over the order of presentation in a model that captures some key features of common law trials. We have demonstrated that litigants cannot prefer

[10] The construction is similar to that employed to prove Lemma.

to lead, but can prefer to follow. In this sense, the common law order benefits D without any appeal to a presumption of innocence or to the influence of the last word. If J prefers an order then it shares this preference with the designated follower (which may be P). We have also shown that allowing D to choose the order (after observing the witness set) rather than always following benefits neither D nor J relative to the common law order.

We have assumed throughout that litigants share a set of available witnesses: an assumption which captures discovery rules in civil trials. Discovery may in fact be incomplete, and P cannot subpoena the defendant in criminal trials. In the online Appendix, we show that some of our results may then fail. In particular, litigants may prefer to lead because the ensuing outcomes replicate those reached if the follower could commit ex ante to its strategy; J might be the only player to prefer an order; and, strikingly, discovery may harm J.

Damaska, M., 1973. Evidentiary Barriers to Conviction and Two Models of Criminal Procedure. Univ. Pa. Law Rev. 121, 506-589.

Engel, C., Timme, S., Glockner, A., 2020. Coherence-based Reasoning and Order Effects in Legal Judgements. Psychol. Public Policy Law 26, 333-352.

Glazer, J., Rubinstein, A., 2001. Debates and Decisions: On a Rationale of Argumentation Rules. Games Econ. Behav. 36, 158-173.

Hart, S., I. Kremer, Perry, M., 2017. Evidence Games: Truth and Commitment. Am. Econ. Rev. 107, 690-714.

Lipman, B., Seppi, D., 1995. Robust Inference in Communication Games with Partial Provability. J. Econ. Theory 66, 370-405.

Roberts, P., Zuckerman, A., 2010. Criminal Evidence (2^{nd} ed.). Oxford University Press, Oxford.

Subrin, S., 1998. Fishing Expeditions Allowed: The Historical Background of the 1938 Federal Discovery Rules. Boston Coll. Law Rev. 39, 691-745.

Zamir, E., Teichman D., 2018. Behavioral Law and Economics. Oxford University Press, Oxford.

APPENDIX (PROOFS)

We will simplify the proofs by focusing on J's belief about W after observing the evidence pair rather than its beliefs about $[W, s]$.

Proof of Proposition 1

a) Consider the following construction (say, X) for some game $\Gamma_{L,F}$:

$e_L = \widehat{W}$ at every W. At each W: $e_F = \widehat{W}$ unless $W \in \mathbf{W}^{v_L}$ and there is $W' \in \mathbf{W}^{v_F}$ and $e_F^* \in W \cup pass$ such that $e_L \cup e_F^* = \widehat{W'}$, in which case $e_F = e_F^*$. After observing $\{e_L, e_F\}$, J believes that W: is W^* and reaches verdict v if $e_L \cup e_F = \widehat{W^*}$ for some $W^* \in \mathbf{W}^v$; is in $\mathbf{W}(e_L \cup e_F) \cap \mathbf{W}^v$ and reaches verdict v if $e_L \cup e_F$ induces v; and is in $\mathbf{W}(e_L \cup e_F) \cap \mathbf{W}^{v_L}$ and reaches verdict v_L otherwise.

X prescribes J to hold beliefs which are feasible and consistent with Bayes rule; and J cannot profitably deviate, given its beliefs. If $W \in \mathbf{W}^{v_l}$ then X prescribes J to reach

v_l, irrespective of e_{-l}, whenever litigant l presents $\widehat{W}$. Consequently, neither litigant can profitably deviate.

b) Suppose, per contra, that $\Gamma_{L,F}$ has an equilibrium with a nonseparating outcome, which must prescribe a miscarriage of justice at some witness set $W \in \mathbf{W}^{v_l}$ (for some litigant l). The premise implies that $\widehat{W}$ induces verdict v_l; and feasibility requires J to reach v_l after observing any $\{e_L, e_F\}$ such that $e_L \cup e_F = \widehat{W}$. Consequently, the putative equilibrium must prescribe the litigants to present evidence whose union is not $\widehat{W}$; and litigant l can then profitably deviate to presenting $\widehat{W}$, as leader or in response to any e_L.■

Proof of Theorem 1

a) The proof relies on Lemma in the text.

Proof of Lemma We focus on $\Gamma_{D,P}$ for expositional convenience: so the leader's favored verdict is acquittal. Let a given equilibrium (say, X) partition $\mathbf{W}$ into the witness sets where it prescribes acquittal ($\mathbf{W}^A$) and its complement ($\mathbf{W}^C$); partitions $\mathbf{W}^A$ into collections of witness sets $\{\mathbf{V}^A\}$, and prescribes $\{e_D, e_P\}$ such that $e_D \cup e_P \in \cap(W^a \in \mathbf{V}^A)$ at every $W^a \in \mathbf{V}^A$ and $\mathbf{V}^A \subseteq \mathbf{W}^A$; and partitions $\mathbf{W}^C$ into collections of witness sets $\{\mathbf{V}^C\}$, and prescribes $\{e_D, e_P\}$ such that $e_D \cup e_P \in \cap(W^c \in \mathbf{V}^C)$ at every $W^c \in \mathbf{V}^C$ and $\mathbf{V}^C \subseteq \mathbf{W}^C$. If $W^a \in \mathbf{W}^A$ [resp. $W^c \in \mathbf{W}^C$] then $\widehat{W^a}$ [resp. $\widehat{W^c}$] cannot induce conviction [resp. acquittal], else P [resp. D] could profitably deviate to presenting $\widehat{W^a}$ [resp. $\widehat{W^c}$]. There can be no $W^c \in \mathbf{W}^C$ and $\mathbf{V}^A$ such that $\widehat{W^c} = \cap(W^a \in \mathbf{V}^A)$, as P could then profitably deviate at each $W^a \in \mathbf{V}^A$ to presenting its prescribed evidence at W^c.

Consider the following strategy combination and beliefs in $\Gamma_{P,D}$ (say, Y):

$e_P = \widehat{W}$ unless $W \in \mathbf{V}^A$ and $\mathbf{V}^A \subseteq \mathbf{W}^A$, in which case $e_P = w(\mathbf{V}^A) \in \cap(W^a \in \mathbf{V}^A)$. At every $W \in \mathbf{V}^A \subseteq \mathbf{W}^A$: $e_D = \widehat{W}$ unless $e_P = w(\mathbf{V}^A)$, in which case $e_D = w(\mathbf{V}^A)$. At any $W^c \in \mathbf{W}^C$: $e_D = \widehat{W^c}$ unless $W^c \in \mathbf{W}^\gamma$ and $e_P = w(\mathbf{V}^A)$ for some $\mathbf{V}^A \subseteq \mathbf{W}^A$, in which case $e_D = w(\mathbf{V}^A)$; or $e_P \subseteq W^a \backslash w(\mathbf{V}^A)$ for some $W^a \in \mathbf{V}^A \subseteq \mathbf{W}^A$ and $W^a \subset W^c$, in which case $e_D = \widehat{W^a}$; or $e_P = \widehat{W}$ at some $W \in \mathbf{W}^C \cap \mathbf{W}^\alpha$, in which case $e_D = e_P$. After observing $\{e_P, e_D\}$: J to acquit and infer that W is: in $\mathbf{W}(e_D \cup e_P) \cap \mathbf{W}^\alpha$ if $e_P \cup e_D$ induces acquittal; is $W^a \in \mathbf{V}^A$ if $e_P \subseteq W^a \backslash w(\mathbf{V}^A)$ and $e_D = \widehat{W^a}$; is $W^a \in \mathbf{V}^A$ with probability $\frac{\sum_{s \in \mathbf{S}} \pi(W^a|s)p(s)}{\sum_{W \in \mathbf{V}^A} \sum_{s \in \mathbf{S}} \pi(W|s)p(s)}$ if $e_P = e_D = w(\mathbf{V}^A)$; is $W^c \in \mathbf{W}^C \cap \mathbf{W}^\alpha$ if $e_P \subseteq e_D = \widehat{W^c}$; and J to convict and infer that the realized W is in $\mathbf{W}(e_D \cup e_P) \cap \mathbf{W}^\gamma$ otherwise.

Y prescribes J to observe $\{w(\mathbf{V}^A), w(\mathbf{V}^A))\}$ at every $W^a \in \mathbf{V}^A$, and to observe both litigants presenting $\widehat{W^c}$ at every $W^c \in \mathbf{W}^C$. Given the strategies that Y prescribes for litigants, J's beliefs are feasible and are consistent with Bayes rule;[11] and J cannot profitably deviate. To see this, note that Y prescribes J to acquit [resp. convict] after observing evidence which induces acquittal [resp. conviction]; to observe the same $\{e_P, e_D\}$ at every $W^a \in \mathbf{V}^A$ for every $\mathbf{V}^A \subseteq \mathbf{W}^A$ in both games, and therefore to acquit at every $W^a \in \mathbf{W}^A$ in both games; and to acquit if D presents $\widehat{W^a}$ in response to $e_P \subseteq W^a$ at some $W^a \in \mathbf{W}^A$ because $\widehat{W^a}$ does not induce conviction at any $W^a \in \mathbf{W}^A$.

Neither litigant can profitably deviate at any $W^c \in \mathbf{W}^C$ because some litigant l can

[11] We say "consistent with" because of our focus on J's beliefs about W rather than $[W, s]$. It is easy to specify complete beliefs for J here which satisfy Bayes rule. This observation will apply to our other constructions in this paper.

ensure that J reaches verdict v_l by presenting $\widehat{W^c}$. Neither litigant can profitably deviate at any $W^a \in \mathbf{W}^A$ because Y prescribes acquittal after D's prescribed response to any $e_P \subseteq W^a$.

These arguments imply that Y is an equilibrium in $\Gamma_{P,D}$ which prescribes acquittal at every witness set in $\mathbf{W}^A$. An equivalent argument establishes Lemma when P is the leader.■

Part a) follows from Lemma. To see this suppose, per contra, that D prefers to lead. Condition 2 in Section 2.3 then implies that D strictly prefers an outcome in $\Gamma_{D,P}$ (say, x) over an outcome in $\Gamma_{P,D}$ (say, y). Lemma then implies that D weakly prefers another outcome in $\Gamma_{P,D}$ (say, y') over x, and that D weakly prefers y over another outcome in $\Gamma_{D,P}$ (say, x'). Transitivity of preferences over outcomes then implies that D prefers y' over x'; so Condition 1 would fail, contrary to the initial supposition. An analogous argument precludes P from preferring to lead.

b) This part follows from analysis of Example 1 in the text, where the bounds on d imply that J observes the same evidence pair at W^1 and at W^{123} and convicts in any equilibrium of either game with a nonseparating outcome: for J cannot observe the same evidence pair at W^2 and at W^{123} or at W^{12} and at W^{123} in an equilibrium of either game because J would then acquit; and P could then profitably deviate to presenting w^3 at W^{123}, as it directly proves factual guilt.

Lemma 1.1 *In Example 1, every outcome of* $\Gamma_{P,D}$ *is separating.*

Proof Suppose, per contra, that J observes the same evidence pair at W^1 and at W^{123} in an equilibrium. J must then acquit at W^{12} and convict at W^{123}, and must convict after observing $\{w^1, w^2\}$, else D could profitably deviate to presenting w^2 at W^{123}. As the equilibrium must prescribe P to present w^2 at W^{12}, P could profitably deviate to presenting w^1 at that witness set.■

Lemma 1.2 *In Example 1,* $\Gamma_{D,P}$ *has an equilibrium which prescribes a wrongful conviction at* W^1*, and has no other nonseparating outcomes.*

Proof Consider the following strategy combination and beliefs:

$e_D = \widehat{W}$ unless $W = W^{123}$, in which case $e_D = w^1$; $e_P = \widehat{W}$ unless $W = W^{123}$ and $e_D = w^1$, in which case $e_P = w^1$. J believes that W is: W^{123} and convicts if $w^3 \in e_D \cup e_P$; W^1 or W^{123} and convicts after observing $\{w^1, w^1\}$; and is in $\mathbf{W}^\alpha$ and acquits after observing any other evidence pair.

D cannot profitably deviate at W^{123} because P would then secure conviction by presenting w^3. J's beliefs satisfy feasibility and are consistent with Bayes rule. The strategy combination and beliefs therefore form an equilibrium.

The bounds on d preclude any other nonseparating outcome.■

Proposition 1 and Lemma 1.1 imply that $\omega_{P,D}$ consists of a separating outcome alone; Proposition 1 and Lemma 1.2 imply that $\omega_{D,P}$ consists of a separating outcome and an outcome with a wrongful conviction at W^1. Consequently, both litigants prefer to follow.

c) Example 1 illustrates games in which $\omega_{P,D}$ consists of the separating outcome, while $\omega_{D,P}$ also contains another outcome. As J prefers the separating over every other outcome, J prefers $\Gamma_{P,D}$ over $\Gamma_{D,P}$.

Suppose that J prefers $\Gamma_{L,F}$ over $\Gamma_{F,L}$. As J top-ranks the separating outcome, Proposition 1 implies that $\omega_{L,F}$ must contain the separating outcome alone, and that $\Gamma_{F,L}$ must have an equilibrium (say, X) which prescribes miscarriages of justice at some witness set(s). X cannot prescribe J to wrongfully reach verdict v_F at any witness set, else Lemma would imply that $\Gamma_{L,F}$ also has a nonseparating outcome. Hence, X must prescribe v_L at every witness set where there is a miscarriage of justice. Litigants must then prefer to follow.■

Proof of Proposition 2 Let X denote an equilibrium of a fixed order game, say $\Gamma_{L,F}$. Let Y be a strategy combination in Γ which prescribes D to choose order L, F at every witness set, and for Rounds 1-3 of Γ to then be played according to X's prescription. J does not update its beliefs about the realized witness set after observing D's choice of order on the path of Y; so, by definition of X, no player can profitably deviate once D has chosen order L, F.

Suppose that D deviates to choosing order F, L at some witness set W, and let Y prescribe J not to update its beliefs about the realized witness set after D's deviation to order F, L, and the following strategy combination in the continuation:

The leader (now litigant F) presents $\widehat{W}$. If D is the follower then $e_D = \widehat{W}$ unless there is $e_D^* \subseteq W$ such that $e_P \cup e_D$ induces acquittal, in which case $e_D = e_D^*$. If P is the follower then $e_P = \widehat{W}$ unless it induces acquittal and e_D does not induce acquittal, in which case P passes. After observing $\{e_F, e_L\}$, J believes that W is: in $\mathbf{W}(e_L \cup e_F)$ and acquits if $e_L \cup e_F$ induces acquittal; and in $\mathbf{W}(e_L \cup e_F) \cap \mathbf{W}^\gamma$ and convicts otherwise.

Y prescribes J not to update its beliefs about W after D has chosen prescribed order L, F; so, by definition of X, no player can profitably deviate once D has chosen order L, F. Y prescribes J not to update its beliefs about W after observing unexpected order F, L. After subsequently observing every $\{e_F, e_L\}$, J's beliefs satisfy feasibility because $\mathbf{W}(e_L \cup e_F) \cap \mathbf{W}^\gamma$ is nonempty whenever $e_F \cup e_L$ does not induce acquittal, and are consistent with Bayes rule; and J cannot profitably deviate, given its beliefs. Neither litigant can profitably deviate because Y prescribes J to convict unless $e_D \cup e_P$ induces acquittal, and to only observe such an evidence pair if $\widehat{W}$ induces acquittal.

We now turn to D's choice of an order. As X is an equilibrium of $\Gamma_{L,F}$, it prescribes acquittal at every W whose full report induces acquittal. Y prescribes J to only acquit at those W if D deviated to order F, L; so D cannot profitably deviate to choosing order F, L at any W, and Y is an equilibrium of Γ.■

Proof of Theorem 2

a) Suppose, per contra, that D prefers Γ over $\Gamma_{P,D}$. If $\Gamma_{P,D}$ has a nonseparating outcome then D cannot prefer Γ because Propositions 1 and 2 imply that the games share two outcomes; and D can then not prefer Γ over $\Gamma_{P,D}$. Accordingly, suppose that $\Gamma_{P,D}$ only has a separating outcome; so Γ must have an equilibrium (say, X) which prescribes J to wrongfully acquit on the path. We will prove that D can then not prefer Γ by constructing a nonseparating outcome of $\Gamma_{P,D}$, contrary to the initial supposition.

We start with some observations about X. X partitions $\mathbf{W}$ into witness sets at which D leads (denoted $\mathbf{W}_{D,P}$) and witness sets at which P leads (denoted $\mathbf{W}_{P,D}$). It also prescribes J to acquit after observing some evidence pair at a collection of witness sets (say, $\mathbf{V}$) such that $\mathbf{V} \cap \mathbf{W}^\gamma$ is nonempty. $\widehat{W}$ does not induce conviction [resp. acquittal] for any $W \in \mathbf{V}$ [resp. $W' \notin \mathbf{V}$], else P [resp. D] could profitably deviate to presenting $\widehat{W}$

[resp. $\widehat{W'}$]. In addition:

Lemma 2.1 *If X prescribes J to convict at a singleton witness set W' and to acquit after observing the same evidence pair and order of presentation at every $W \in \mathbf{V}$ then $W' \neq \cap(W \in \mathbf{V})$.*

Proof X cannot prescribe the same order at W' and at the witness sets in $\mathbf{V}$, and cannot prescribe different orders, else D could profitably deviate to the other order at W'.■

Consider the strategy combination and beliefs in $\Gamma_{P,D}$ (denoted Y), which prescribes *$e_P = \widehat{W}$ at every $W \notin V$, and $e_P = w^{\mathbf{V}} \in \cap(W \in \mathbf{V})$ otherwise. At every $W \in \mathbf{V}$: $e_D = \widehat{W}$ unless $e_P = w^{\mathbf{V}}$, in which case $e_D = w^1$. At every $W' \notin \mathbf{V}$: $e_D = \widehat{W'}$ unless $e_P \neq \widehat{W'}$, $W' \in \mathbf{W}^\gamma$ and either: $e_P = w^{\mathbf{V}}$, in which case $e_D = w^{\mathbf{V}}$; or $e_P \subseteq W \backslash w^{\mathbf{V}}$ for some $W \subset W'$ and $W \in (\mathbf{W}\backslash\mathbf{V}) \cap \mathbf{W}^\alpha$, in which case $e_D = \widehat{W}$; or $e_P = \widehat{W"}$ at some $W" \in (\mathbf{W}\backslash\mathbf{V}) \cap \mathbf{W}^\alpha$, in which case $e_D = e_P$. After observing $\{e_P, e_D\}$, J to acquit and infer that W is in $\mathbf{W}(e_D \cup e_P)$ if $e_D \cup e_P$ induces acquittal; is $W \in \mathbf{V}$ with probability $\frac{\sum_{s\in\mathbf{S}} \pi(W|s)p(s)}{\sum_{W'\in\mathbf{V}}\sum_{s\in\mathbf{S}} \pi(W'|s)p(s)}$ if $e_P = e_D = w^{\mathbf{V}}$; is $W \in \mathbf{V}$ if $e_P \in W\backslash w^{\mathbf{V}}$ and $e_D = \widehat{W}$; is W if $e_P \subseteq e_D$ and $e_D = \widehat{W}$ for some $W \in (\mathbf{W}\backslash\mathbf{V}) \cap \mathbf{W}^\alpha$. J to convict and infer that $W \in \mathbf{W}(e_D \cup e_P) \cap \mathbf{W}^\gamma$ otherwise.*

In light of Lemma 2.1, Y is well-defined in the sense that it prescribes J to reach a unique verdict after observing every evidence pair. Furthermore, J's beliefs are consistent with Bayes rule on the path, and satisfy feasibility because $\widehat{W}$ does not induce conviction at any $W \in \mathbf{V}$; and J cannot profitably deviate, given its beliefs. Neither litigant can profitably deviate at any $W \in \mathbf{V}$ because Y prescribes J to acquit after observing D's prescribed response to e_P: for every $e_P \in W$. Neither litigant can profitably deviate at any witness set $W' \notin \mathbf{V}$ because, if $W' \in \mathbf{W}^{v_l}$, then Y prescribes J to reach verdict v_l when litigant l presents $\widehat{W'}$. In sum, strategy combination Y forms an equilibrium; and the outcome is nonseparating because, by supposition, $\mathbf{V}$ contains a witness set in $\mathbf{W}^\gamma$. Proposition 2 then implies that Γ and $\Gamma_{P,D}$ share a nonseparating outcome; so D cannot prefer Γ over $\Gamma_{P,D}$.

b) Example 1 illustrates a situation in which D prefers $\Gamma_{P,D}$ over Γ: for $\Gamma_{P,D}$ then only has a separating outcome, and $\Gamma_{D,P}$ also has an outcome with a wrongful conviction. Proposition 2 implies that Γ shares $\Gamma_{D,P}$'s nonseparating outcome; and the bounds on d imply that every other outcome of Γ is separating. Hence, D prefers $\Gamma_{P,D}$ over Γ.

We now prove by example that D could prefer $\Gamma_{D,P}$ over Γ:

Example A1 *There are five states: $\mathbf{S} = \{i^1, i^2, g^1, g^2, g^3\}$, and the defendant is only factually innocent in states i^1* and *i^2. There are five witnesses: $w^1 = \{i^1, i^2, g^1, g^2\}$, $w^2 = \{i^2, g^1\}$, $w^3 = \{g^1\}$, $w^4 = \{g^2\}$ and $w^5 = \{g^3\}$ and five witness sets: $W^1 = \{w^1\}$, $W^{12} = \{w^1, w^2\}$, $W^{13} = \{w^1, w^3\}$, $W^{124} = \{w^1, w^2, w^4\}$ and $W^5 = \{w^5\}$. The conditional distribution of witness sets is $\pi(W^1|i^1) = \pi(W^{12}|i^2) = \pi(W^{13}|g^1) = \pi(W^{124}|g^2) = \pi(W^5|g^3) = 1$; $\{p(s)\}_{s\in\mathbf{S}}$ and d satisfy*

$$\max\{\frac{p(g^1)}{p(g^1)+p(i^1)}, \frac{p(g^2)}{p(g^2)+p(i^1)}, \frac{p(g^2)}{p(g^2)+p(i^2)}\} < d < \frac{p(g^1)}{p(g^1)+p(i^2)}.$$

Lemma 2.2 *In Example A1, D prefers $\Gamma_{D,P}$ over Γ.*

Proof w^3, w^4 and w^5 directly prove factual guilt; so no equilibrium of a game can prescribe any wrongful acquittals.

Γ has an equilibrium which prescribes

D to lead at W^1 and to follow at every other W. J to infer from the order that W is: W^1 if D leads; and W^{12} with probability $\frac{p(i^2)}{1-p(i^1)}$, W^{13} with probability $\frac{p(g^1)}{1-p(i^1)}$, W^{124} with probability $\frac{p(g^2)}{1-p(i^1)}$ and W^5 with probability $\frac{p(g^3)}{1-p(i^1)}$ if P leads. If D leads then $e_D = e_P = \widehat{W}$ at every W; and, after observing $\{e_D, e_P\}$: J to acquit and infer that $W = W^1$ after observing $\{w^1, w^1\}$ or $\{w^1, pass\}$ and J to convict and infer that $W = W^{13}$ if $w^3 \in e_D \cup e_P$, that $W = W^5$ if $e_D = w^5$, and that $W = W^{124}$ otherwise. If P leads then $e_P = w^1$ at W^1, W^{12} and W^{13} and $e_P = \widehat{W}$ at $W \in \{W^{124}, W^5\}$, $e_D = \widehat{W}$ at every W; and, after observing $\{e_P, e_D\}$: J to convict and infer that $W = W^{13}$ if $e_P = w^1$ or $w^3 \in e_P \cup e_D$, **that** *$W = W^5$ if $w^5 \in e_P \cup e_D$, and that $W = W^{124}$ otherwise.*

To see that this an equilibrium, note that J's inferences satisfy feasibility and are consistent with Bayes rule (because of the upper bound on d); and J cannot profitably deviate, given its beliefs. J's choices when P leads entail conviction after it observes every evidence pair; so neither litigant can profitably deviate after D has chosen to follow, and D cannot profitably deviate to following at W^1. J's choices when D leads entail acquittal at W^1; so neither litigant can profitably deviate to presenting other evidence at W^1. On the other hand, J would convict after P presents the full report at every other witness set when D leads; so neither litigant can profitably deviate at any witness set when D leads, and D cannot profitably deviate to leading at witness sets other than W^1. In sum, the strategy combination forms an equilibrium of Γ which prescribes a wrongful conviction at W^{12}. The only miscarriage of justice at any other nonseparating outcome of Γ is also a wrongful conviction.

We now claim that every outcome of $\Gamma_{D,P}$ is separating. As noted above, no equilibrium can prescribe a wrongful acquittal. The lower bound on d therefore implies that W^{12} is the only witness set at which an equilibrium can prescribe a miscarriage of justice; and J must then observe the same evidence pair at W^{12} and W^{13}. However, this is impossible in equilibrium because P could then profitably deviate in response to D presenting w^1 at W^1.

In sum, Γ has equilibria which prescribe wrongful convictions, but no equilibria which prescribe wrongful acquittals, whereas every outcome of $\Gamma_{D,P}$ is separating.

c) Propositions 1 and 2 immediately imply the first claim. Example 1 illustrates a situation in which J prefers playing a fixed order game over Γ.■