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	 Gibbard [5] argues that if the indicative conditional (→→) satisfies <i>import-export</i> (and a few other assumptions), then it is logically equivalent to the material conditional (⊃). I will begin by rehearsing Gibbard's informal argument. 		 So, if (iii) is a logical truth and (ii) are too. Finally, surstrong as the material con (generally) that <i>p</i> → <i>q</i> ent (iv) (4 ⊃ C) ⊃ (4 ∞ C) 	(as Gibbard supposes), then (i) ppose the indicative is at least as ditional. That is, suppose <i>ails</i> $p \supset q$. Then, (i) entails (iv).	
_	Then, I will provide a rigorous, axiomatic proof of a more general "collapse theorem" for the indicative.		 Hence, (iv) is (also) a logical Therefore, in general, <i>p</i> ~~ 	al truth. So, $A \supset C$ entails $A \rightsquigarrow C$. q entails $p \supset q$ and $p \supset q$ entails	
	 Suppose the indicative satisfies <i>import-export</i>. (IE) A ~~ (B ~~ C) is <i>logically equivalent</i> to (A & B) ~~ C. If ~~ satisfies (IE), then (i) is equivalent to (ii). (i) (A ⊃ C) ~~ (A ~~ C). 		 <i>p</i> ~~ <i>q</i>. That is, in general, Let <i>L</i> be a sentential (obje 'A', 'B',, and two <i>logica</i> <i>L</i> also contains another b 	w and ⊃ are logically equivalent. ect) language containing atoms <i>l</i> connectives '&' and ' \rightarrow '.	
	 (ii) ((A ⊃ C) & A) ~ C. Substitutivity of logical equivalents (in antecedents of indicatives) implies that (ii) [and ∴ (i)] is equivalent to (iii). (iii) (A & C) ~ C. 		 <i>L</i>'s metalanguage contain meta-linguistic relations: <i>single premise deducibility</i> as the property of <i>theoren</i> 	the English indicative. as metavariables $p, q,$ and two – and \vdash . ' \vdash ' is interpreted as (or <i>entailment</i>). ' \vdash ' is interpreted <i>nhood</i> (or <i>logical truth</i>).	
Branden	Fitelson Two New(ish) Triviality Results for Indicatives	2 Bra	nden Fitelson Two New(ish) Triviality Results for Indicatives	3
Gibbard ○○●○	Lewis Extras 00000000 00	Refs Gib	bard Lewis ● 00000000	Extras 00	Refs
	• Here's our weak background theory (independent axioms).		• Finally, consider this	nport-export axiom schema.	
	$(1) \vdash (p \& q) \rightarrow p.$		(8) $\vdash p \rightsquigarrow (q \rightsquigarrow r)$ if and c	only if $\vdash (n \& a) \rightsquigarrow r$.	
	$(2) \vdash (p \& q) \rightsquigarrow q.$			$(p \perp q)$	
	(3) If $p \Vdash q$ and $p \Vdash r$, then $p \Vdash q \& r$.		Theorem 1 . The schem given the background the section of the sec	ata (1)–(8) are independent; and, heory (1)–(7), (8) holds <i>if and only if</i>	
	(3) If $p \Vdash q$ and $p \Vdash r$, then $p \Vdash q \& r$. (4) If $p \Vdash q$ and $q \Vdash p$, then $\vdash p \rightsquigarrow r$ if and only if $\vdash q \rightsquigarrow r$.		Theorem 1. The schem given the background the $(9) \ p \rightarrow q \Vdash p \rightsquigarrow q$ and	ata (1)–(8) are independent; and, heory (1)–(7), (8) holds <i>if and only if</i> $p \rightsquigarrow q \Vdash p \rightarrow q$.	
	 (3) If <i>p</i> ⊨ <i>q</i> and <i>p</i> ⊨ <i>r</i>, then <i>p</i> ⊨ <i>q</i> & <i>r</i>. (4) If <i>p</i> ⊨ <i>q</i> and <i>q</i> ⊨ <i>p</i>, then ⊢ <i>p</i> ⊷ <i>r</i> if and only if ⊢ <i>q</i> ⊷ <i>r</i>. (5) If ⊢ <i>p</i> → <i>q</i>, then <i>p</i> ⊨ <i>q</i>. (6) If ⊢ <i>p</i> ⊷ <i>q</i>, then ⊢ <i>p</i> → <i>q</i>. 		Theorem 1. The schem given the background the $(9) \ p \rightarrow q \Vdash p \rightsquigarrow q$ and Theorem 2. Axioms (1) Even if we add <i>modus</i> p	ata (1)-(8) are independent; and, heory (1)-(7), (8) holds <i>if and only if</i> $p \rightsquigarrow q \Vdash p \rightarrow q$. -(8) do <i>not</i> entail collapse of \rightsquigarrow to \supset . <i>ponens</i> (MP) to (1)-(8), we <i>do not</i> get	
	 (3) If <i>p</i> ⊨ <i>q</i> and <i>p</i> ⊨ <i>r</i>, then <i>p</i> ⊨ <i>q</i> & <i>r</i>. (4) If <i>p</i> ⊨ <i>q</i> and <i>q</i> ⊨ <i>p</i>, then ⊢ <i>p</i> ⊷ <i>r</i> if and only if ⊢ <i>q</i> ⊷ <i>r</i>. (5) If ⊢ <i>p</i> → <i>q</i>, then <i>p</i> ⊨ <i>q</i>. (6) If ⊢ <i>p</i> ∞ <i>q</i>, then ⊢ <i>p</i> → <i>q</i>. (7) ⊢ <i>p</i> → (<i>q</i> → <i>r</i>) if and only if ⊢ (<i>p</i> & <i>q</i>) → <i>r</i>. 		Theorem 1. The schem given the background the $(9) \ p \rightarrow q \Vdash p \rightsquigarrow q$ and Theorem 2. Axioms (1) Even if we add <i>modus</i> per $(10) \vdash ((p \rightsquigarrow q) \rightsquigarrow p) \rightsquigarrow$	ata (1)-(8) are independent; and, heory (1)-(7), (8) holds <i>if and only if</i> $p \rightarrow q \Vdash p \rightarrow q$. -(8) do <i>not</i> entail collapse of \rightarrow to \supset . <i>conens</i> (MP) to (1)-(8), we <i>do</i> not get $p \rightarrow p$.	
	 (3) If p ⊨ q and p ⊨ r, then p ⊨ q &r. (4) If p ⊨ q and q ⊨ p, then ⊢ p ⊷ r if and only if ⊢ q ∞ r. (5) If ⊢ p → q, then p ⊨ q. (6) If ⊢ p ∞ q, then ⊢ p → q. (7) ⊢ p → (q → r) if and only if ⊢ (p & q) → r. The ∞ fragment of this background theory is <i>very</i> weak. (1)-(7) do <i>not</i> imply <i>any</i> of the following three principles. 		Theorem 1. The schem given the background the $(9) \ p \rightarrow q \Vdash p \rightsquigarrow q$ and Theorem 2. Axioms (1) Even if we add <i>modus</i> p $(10) \vdash ((p \rightsquigarrow q) \rightsquigarrow p) \rightsquigarrow$ That is, <i>Peirce's Law</i> is a classicality is inessential	ata (1)-(8) are independent; and, heory (1)-(7), (8) holds <i>if and only if</i> $p \rightsquigarrow q \Vdash p \rightarrow q$. -(8) do <i>not</i> entail collapse of \rightsquigarrow to \supset . <i>bonens</i> (MP) to (1)-(8), we <i>do not</i> get $\rightarrow p$. <i>not</i> implied by (1)-(8) + (MP). So, <i>l</i> to Gibbardian collapse.	
	 (3) If p ⊨ q and p ⊨ r, then p ⊨ q &r. (4) If p ⊨ q and q ⊨ p, then ⊢ p ⊷ r if and only if ⊢ q ∞ r. (5) If ⊢ p → q, then p ⊨ q. (6) If ⊢ p ∞ q, then ⊢ p → q. (7) ⊢ p → (q → r) if and only if ⊢ (p & q) → r. • The ∞ fragment of this background theory is <i>very</i> weak. (1)-(7) do <i>not</i> imply <i>any</i> of the following three principles. • If ⊢ p and ⊢ p ∞ q, then ⊢ q. • ⊢ p ∞ (q ∞ p). 		Theorem 1. The schem given the background the (9) $p \rightarrow q \Vdash p \rightsquigarrow q$ and Theorem 2. Axioms (1) Even if we add <i>modus</i> p (10) $\vdash ((p \rightsquigarrow q) \rightsquigarrow p) \rightsquigarrow$ That is, <i>Peirce's Law</i> is a classicality is inessential Theorem 3. (1)–(8) + (M conditional collapses to strong as the intuitionis	ata (1)-(8) are independent; and, heory (1)-(7), (8) holds <i>if and only if</i> $p \rightarrow q \Vdash p \rightarrow q$. -(8) do <i>not</i> entail collapse of \rightarrow to \supset . <i>conens</i> (MP) to (1)-(8), we <i>do not</i> get $\rightarrow p$. <i>not</i> implied by (1)-(8) + (MP). So, <i>l</i> to Gibbardian collapse. (P) <i>do</i> imply that the indicative \rightarrow a conditional that is <i>at least as</i> <i>tic conditional</i> : (1)-(8) + (MP) imply	
	 (3) If p ⊨ q and p ⊨ r, then p ⊨ q &r. (4) If p ⊨ q and q ⊨ p, then ⊢ p ⊷ r if and only if ⊢ q ∞ r. (5) If ⊢ p → q, then p ⊨ q. (6) If ⊢ p ∞ q, then ⊢ p → q. (7) ⊢ p → (q → r) if and only if ⊢ (p & q) → r. • The ∞ fragment of this background theory is <i>very</i> weak. (1)-(7) do <i>not</i> imply <i>any</i> of the following three principles. • If ⊢ p and ⊢ p ∞ q, then ⊢ q. • ⊢ p ∞ (q ∞ p). • ⊢ (p ∞ (q ∞ r)) ∞ ((p ∞ q) ∞ (p ∞ r)). 		Theorem 1. The schem given the background the $(9) \ p \rightarrow q \Vdash p \rightsquigarrow q$ and Theorem 2. Axioms (1) Even if we add <i>modus</i> performing $(10) \vdash ((p \rightsquigarrow q) \rightsquigarrow p) \rightsquigarrow$ That is, <i>Peirce's Law</i> is a classicality is inessential. Theorem 3. (1)–(8) + (Merconditional collapses to strong as the intuitionissed (MP) If $\vdash p$ and $\vdash p \rightsquigarrow q$,	ata (1)-(8) are independent; and, heory (1)-(7), (8) holds <i>if and only if</i> $p \rightarrow q \Vdash p \rightarrow q$. -(8) do <i>not</i> entail collapse of \rightarrow to \supset . <i>conens</i> (MP) to (1)-(8), we <i>do</i> not get $\rightarrow p$. <i>not</i> implied by (1)-(8) + (MP). So, <i>l</i> to Gibbardian collapse. (P) <i>do</i> imply that the indicative \Rightarrow a conditional that is <i>at least as</i> <i>tic conditional</i> : (1)-(8) + (MP) imply then $\vdash q$.	
Ľ	 (3) If p ⊨ q and p ⊨ r, then p ⊨ q &r. (4) If p ⊨ q and q ⊨ p, then ⊢ p ∞ r if and only if ⊢ q ∞ r. (5) If ⊢ p → q, then p ⊨ q. (6) If ⊢ p ∞ q, then ⊢ p → q. (7) ⊢ p → (q → r) if and only if ⊢ (p & q) → r. The ∞ fragment of this background theory is <i>very</i> weak. (1)-(7) do <i>not</i> imply <i>any</i> of the following three principles. If ⊢ p and ⊢ p ∞ q, then ⊢ q. ⊢ p ∞ (q ∞ p). ⊢ (p ∞ (q ∞ r)) ∞ ((p ∞ q) ∞ (p ∞ r)). S Modus ponens for → does <i>not</i> follow from (1)-(7) either! So, 		Theorem 1. The schem given the background theorem (9) $p \rightarrow q \Vdash p \rightsquigarrow q$ and Theorem 2. Axioms (1) Even if we add <i>modus</i> p $(10) \vdash ((p \rightsquigarrow q) \rightsquigarrow p) \rightsquigarrow$ That is, <i>Peirce's Law</i> is a classicality is inessential. Theorem 3. (1)–(8) + (Metric conditional collapses to strong as the intuitionis (MP) If $\vdash p$ and $\vdash p \rightsquigarrow q$, $(11) \vdash p \rightsquigarrow (q \rightsquigarrow p)$.	ata (1)-(8) are independent; and, heory (1)-(7), (8) holds <i>if and only if</i> $p \rightarrow q \Vdash p \rightarrow q$. -(8) do <i>not</i> entail collapse of \rightarrow to \supset . <i>bonens</i> (MP) to (1)-(8), we <i>do</i> not get $\rightarrow p$. <i>not</i> implied by (1)-(8) + (MP). So, <i>l</i> to Gibbardian collapse. (P) <i>do</i> imply that the indicative \Rightarrow a conditional that is <i>at least as</i> <i>tic conditional</i> : (1)-(8) + (MP) imply then $\vdash q$.	
0	 (3) If p ⊨ q and p ⊨ r, then p ⊨ q &r. (4) If p ⊨ q and q ⊨ p, then ⊢ p ∞ r if and only if ⊢ q ∞ r. (5) If ⊢ p → q, then p ⊨ q. (6) If ⊢ p ∞ q, then ⊢ p → q. (7) ⊢ p → (q → r) if and only if ⊢ (p & q) → r. The ∞ fragment of this background theory is <i>very</i> weak. (1)-(7) do <i>not</i> imply <i>any</i> of the following three principles. If ⊢ p and ⊢ p ∞ q, then ⊢ q. ⊢ p ∞ (q ∞ p). ⊢ (p ∞ (q ∞ r)) ∞ ((p ∞ q) ∞ (p ∞ r)). Modus ponens for → does <i>not</i> follow from (1)-(7) either! So, <i>modus ponens</i> is <i>irrelevant</i> to Gibbardian collapse! 		Theorem 1. The schem given the background the second se	ata (1)-(8) are independent; and, heory (1)-(7), (8) holds <i>if and only if</i> $p \rightarrow q \Vdash p \rightarrow q$. -(8) do <i>not</i> entail collapse of \rightarrow to \supset . <i>ponens</i> (MP) to (1)-(8), we <i>do not</i> get $\rightarrow p$. <i>not</i> implied by (1)-(8) + (MP). So, <i>l</i> to Gibbardian collapse. (P) <i>do</i> imply that the indicative \Rightarrow a conditional that is <i>at least as</i> <i>tic conditional</i> : (1)-(8) + (MP) imply then $\vdash q$.	

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<list-item> While Gibbard's [5] argument was <i>logical</i> in nature, Lewis's triviality arguments [9, 8] were <i>probabilistic</i> in nature. I will derive these Lewisian results in a novel way. Normally, these results are derived <i>axiomatically</i> and in a way that obscures the crucial role of (probabilistic) import-export. I will adopt an <i>algebraic</i> approach. This will also allow us to derive <i>the strongest possible</i> Lewisian triviality results all depend (implicitly) on (probabilistic) import-export. My presentation will mirror the way in which I presented my generalization of Gibbard's "collapse theorem." I will begin with a very weak probabilistic background theory, probabilistic import-export is <i>equivalent</i> to the condition that leads to Lewisian triviality. </list-item>	 Let Pr(·) be a probability function over a Boolean algebra of statements expressed <i>via</i> truth-functional connectives, <i>plus</i> a (possibly non-truth-functional) indicative connective <i>→</i>. Our background theory is the following single equational axiom schema [1, 12], sometimes called "The Equation." (I) Pr(<i>p → q</i>) = Pr(<i>q</i> <i>p</i>) ≝ Pr(<i>p ∧ q</i>), provided Pr(<i>p</i>) > 0. The background theory (I) is <i>very</i> weak. That is, (I) <i>alone</i> does not entail any Lewisian trivialities for Pr(·) and <i>→</i>. It is only when we combine (I) with the following <i>import-export</i> schema that we are led to Lewisian trivialities. (II) Pr(<i>p →</i> (<i>q → r</i>)) = Pr((<i>p</i> & <i>q</i>) <i>→ r</i>), provided Pr(<i>p</i> & <i>q</i>) > 0. Given (I), (II) is <i>equivalent</i> to the following (<i>very</i> strong) equational axiom schema (see Extras #16 for a proof of this equivalence). I will call (III) "The <i>Resilient</i> Equation" [11]. 			
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 Lewis's original triviality results [9, 8] and all subsequent results of this kind [6, 10] are derived <i>via x</i>-instances of (III). Lewis used the instances <i>x</i> := <i>q</i> and <i>x</i> := ¬<i>q</i> of (III) to derive his original triviality result [9]. Milne [10] used the instance <i>x</i> := <i>p</i> ⊃ <i>q</i>. More on these below. And, see [6] for a survey. 	P Q $P \rightsquigarrow Q$ $Pr(\cdot)$ T T T a T T F b T F T c T F T c T F F d F T c			
• A natural question is: What is <i>the strongest</i> triviality result that can be derived from (III), <i>via</i> instantiations of <i>x</i> ?	$\begin{array}{c cccc} F & T & F & f \\ \hline F & F & T & g \\ \hline F & F & F & h \\ \end{array}$			
• Using my decision procedure for Pr-calculus [4], I was able to determine the algebraic content of the conjunction of <i>all</i> (in a sense to be made precise shortly) <i>x</i> -instances of (III).	 So as to maximize generality, we assume {P, Q, P ~~ Q} are <i>logically independent</i>. In this way, <i>we assume nothing</i> about the <i>logical</i> relationship(s) between P ~~ Q, P, and Q. 			
 Then, I was able to show that one only needs <i>three x</i>-instances of (III) to derive this <i>strongest</i> triviality result. Let's get more precise. Without loss of generality, consider 	• Each of the $2^8 = 256$ propositions $x \in \mathcal{B}$ is then assigned a probability by $Pr(\cdot)$ in the usual way — by adding up the probability masses of the states which feature in <i>x</i> 's DNF			
- Let b get more precise, without 1055 of generality, consider	probability masses of the states which feature in x 's DNF.			

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 It helps to re-state (III), so that it involves the "atomic" propositions {<i>P</i>, <i>Q</i>, <i>P</i> → <i>Q</i>} from our algebra <i>B</i>, above. (III^B) Pr(<i>P</i> → <i>Q</i> <i>x</i>) = Pr(<i>Q</i> <i>P</i> & <i>x</i>), provided Pr(<i>P</i> & <i>x</i>) > 0. This rendition (III^B) makes it clear that (the universally quantified) <i>x</i> ranges over the 256 propositions in <i>B</i>. As it happens, there are 191 instances of (III^B) which do not (by probability theory alone) violate Pr(<i>P</i> & <i>x</i>) > 0. The following theorem was verified [2, 4] by determining necessary and sufficient algebraic conditions for the joint satisfaction of all 191 of these equational constraints (III^B). Theorem 4 ([2]). Provided that Pr(<i>P</i> & <i>Q</i>) > 0 and Pr(<i>P</i> & ¬<i>Q</i>) > 0, (III^B) ⇔ Pr (<i>P</i> & (<i>Q</i> = (<i>P</i> → <i>Q</i>))) = 1. Luckily, the same result can be reached using <i>only three</i> of the 191 instances of (III^B). I will now go through that simpler proof of Theorem 4 (⇒). We proceed in three stages 				• Stage 1. The $\neg Q$ -instance of (III ^B). (III ^B _{$\neg Q$}) Pr($P \rightsquigarrow Q \neg Q$) = Pr($Q P \& \neg Q$), provided Pr($P \& \neg Q$) > 0. • Algebraically, (III ^B _{<math>\neg Q) is equivalent to Pr($P \rightsquigarrow Q \neg Q$) = $\frac{Pr((P \rightsquigarrow Q) \& \neg Q)}{Pr(\neg Q)} = \frac{c + g}{c + d + g + h} = 0 = Pr(Q P \& \neg Q)$ • Assuming Pr($P \& \neg Q$) > 0, this equation will be true <i>iff</i> c + g = 0</math>. Thus, $c = g = 0$, which yields this <i>revised</i> STT: $\frac{P Q P \rightsquigarrow Q Pr(\cdot)}{\frac{T T T a}{T F F d}}$ $\frac{P Q P \rightsquigarrow Q Pr(\cdot)}{\frac{T F F d}{F T T e}}$}				
Branden Fitelson	Two New(ish) Triviality	y Results for Indicatives	10	Branden Fitelson	F F Two New(ish) T	F れ riviality Results for Indicatives	11	
Gibbard 0000	Lewis ○○○○○●○○	Extras 00	Refs	Gibbard 0000	Lewis ○○○○○○○●○	Extras oo	Refs	
• Stag $(III_{P \supset Q}^{\mathcal{B}})$ • Alge $Pr(P \rightsquigarrow Q I$ • Assu b + c	ge 2. The $P \supset Q$ -instance of $Pr(P \rightsquigarrow Q \mid P \supset Q) = Pr(Q \mid P$ ebraically, $(III_{P\supset Q}^{\mathcal{B}})$ is equivale $P \supset Q) = \frac{Pr((P \rightsquigarrow Q) \& (P \supset Q))}{Pr(P \supset Q)} =$ uming $Pr(P \& Q) > 0$, this equivalent f + h = 0. So, $b = f = h = 0\frac{P \mid Q \mid P \rightsquigarrow Q}{T \mid T \mid T \mid F \mid $	(III ^B). (III ^B). (III ^B), if $Pr(P \otimes P = Q)$), if $Pr(P \otimes P = Q)$, if $Pr(P \otimes P = Q)$, if $Pr(P \otimes P = Q)$, and our STT becomes and our STT	(& Q) > 0. $Pr(Q P\&(P \supset Q))$ <i>iff</i> omes:	 Stage (Ⅲ^B_⊤) P Algeb Pr(P Since I Pr(P & 	3. The \top -instance of Q or $(P \rightsquigarrow Q \mid \top) = \Pr(Q \mid P)$ praically, $(III_{\top}^{\mathcal{B}})$ — which $P \rightsquigarrow Q) = a + e = \frac{a}{a + e}$ $\Pr(P) > 0$, this holds <i>iff</i> $a \neg Q) = d > 0$, we have a $\frac{P \mid Q \mid P \rightsquigarrow}{T \mid T \mid T}$ $\frac{P \mid Q \mid P \rightsquigarrow}{T \mid T \mid T}$ $\frac{P \mid Q \mid P \rightsquigarrow}{T \mid T \mid T}$ $\frac{P \mid Q \mid P \implies}{T \mid T \mid T}$ $\frac{P \mid Q \mid P \implies}{T \mid T \mid T}$ $\frac{P \mid Q \mid P \implies}{T \mid T \mid T}$ $\frac{P \mid Q \mid P \implies}{T \mid T \mid T}$ $\frac{P \mid Q \mid P \implies}{T \mid T \mid T}$	(III ^B). (III ^B). $a \in T$), provided $Pr(P \otimes T)$ $a is just (IB) — is equived a = \frac{Pr(P \otimes Q)}{Pr(P)} = Pr(Q)a^2 + ad + ae + de - a = 2a = 0 \text{ and } a, d \in (0, 1). IfQ = Pr(\cdot)a \in (0, 1)a \in (0, 1)a \in (0, 1)01 - a01 - a001 - a0001 - a00000000$	 ⁻) > 0. ^yalent to ^y <i>P</i>) = 0. Since <i>Final</i> STT: 	

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٥	So, assuming $Pr(P \& Q) > 0$ and $Pr(P \& \neg Q) > 0$, implies that <i>exactly two states have non-zero pro</i> $P \& Q \& (P \rightsquigarrow Q)$ and $P \& \neg Q \& \neg (P \rightsquigarrow Q)$. <i>QED</i> .	• The triviality results of Gibbard and Lewis seem to suggest that import-export is problematic. But, it is difficult to come up with intuitive counterexamples to either (8) or (II).					
۲	No stronger constraint can be derived from $(III^{\mathcal{B}})$; least two instances of $(III^{\mathcal{B}})$ are required for the re	• Stephan Kaufmann [7] describes a possible counterexample to <i>both</i> (8) <i>and</i> (II). Here is (my rendition of) his example.					
۲	Algebraically, it is easy to see exactly <i>how much</i> so our result is than previous results. Our result im <i>the six probability masses b, c, e, f, g and h are a</i> Lewis [9] relies on the two instances (III_{B}^{B}) and (I	Suppose that the probability that a given match ignites if struck is low, and consider a situation in which it is very likely that the match is <i>not</i> struck but instead is tossed into a camp fire, where it ignites without being struck. Now, consider the following two indicative conditionals					
	only imply that the four masses b, c, f and g are	e zero. As a		(a) If the match will ignite, th	en it'll ignite if struck.		
	result, Lewis's results do not imply $(e.g.)$ that $Pr(P)$			(b) If the match is struck and	it'll ignite, then it'll ignite.		
	• Milne [10] relies on the single instance $(III_{P \supset Q}^B)$, we implies that the three masses b , f and h are zero result, he obtains <i>neither</i> $Pr(P) = 1$ <i>nor</i> $Pr(Q) = 1$.	 According to Kaufmann, while (b) is clearly necessarily (even logically) true, (a) is not. Indeed, Kaufmann even claims that the probability of (a) should be less than 1 					
• It's hard to think of <i>any</i> models that (generally) satisfy (III). Here's one $Pr(x)$ is an <i>indicator function</i> and $n = a \notin a$			• If he is right, we have a counterexample to <i>both</i> (8) <i>and</i> (II)				
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Gibbard 0000	Lewis Extras	Refs	Gibbard 0000	Lewis 00000000	Extras 00	Refs	
•	Given our background theory (I), (II) \iff (III).		[1] E. Ada	ams, The logic of conditionals, 19	65.		
	Proof of \rightarrow Assuming (I) and (II) prove (III)	[2] B.Fite (htt)	elson, The Strongest Possible Lew p://fitelson.org/trivial:	isian Triviality Result, 2014. ity.pdf>			
1	$Pr(x \rightsquigarrow (p \rightsquigarrow q)) = Pr(p \rightsquigarrow q \mid x), \text{ if } Pr(p \& x) > 0$	(I)	[3] Axion	_, Gibbard's Collapse Theorem fo natic Approach, 2013. {http://	r the Indicative Conditional: An fitelson.org/gibbard.pdf〉		
2	$\Pr(x \rightsquigarrow (p \rightsquigarrow q)) = \Pr((p \& x) \rightsquigarrow q), \text{ if } \Pr(p \& x) > 0$ $\Pr((p \& x) \implies q) = \Pr((p \& x) \implies q) = \Pr(p \& x) \text{ if } \Pr(p \& x) > 0$	(II) (I)	[4]	_, A decision procedure for proba . (http://fitelson.org/pm.	bility calculus with applications, pdf)		
(III)	$\therefore \Pr(p \rightsquigarrow q \mid x) = \Pr(q \mid p \& x), \text{ if } \Pr(p \& x) > 0$	(1)	[5] A. Gib	bbard, Two Recent Theories of Co	nditionals, 1981.		
		- , - , -	[6] A. Há <i>condi</i>	jek and N. Hall, <i>The hypothesis o</i> itional probability, 1994.	f the conditional construal of		
۹	Proof of \Leftarrow . Assuming (III) and (I), prove (II). [Not	[7] S. Kau	ufmann, Conditional Predictions:	A Probabilistic Account, 2005.			
(4)	$Pr(n \rightsquigarrow (a \rightsquigarrow r)) = Pr(a \rightsquigarrow r \mid n)$, if $Pr(n \& a) > 0$	(I)	[8] D. Lev	wis, Probabilities of Conditionals	& Conditional Probabilities II, 1980	5.	
5	$\Pr(q \rightsquigarrow r \mid p) = \Pr(r \mid p \& q), \text{ if } \Pr(p \& q) > 0$	(III)	[9]	_, Probabilities of Conditionals &	Conditional Probabilities, 1976.		
6	$Pr(r \mid p \& q) = Pr((p \& q) \leadsto r), \text{ if } Pr(p \& q) > 0$	(I)	[10] P. Mil	ne, The simplest Lewis-style trivia	lity proof yet?, 2003.		
(II)	$\therefore \Pr(p \rightsquigarrow (q \rightsquigarrow r)) = \Pr((p \& q) \rightsquigarrow r), \text{ if } \Pr(p \& q) > 0$	4, 5, 6	[11] B. Sky	yrms, Resiliency, Propensities, and	l Causal Necessity, 1977.		
			[12] R. Sta	lnaker, A Theory of Conditionals,	1968.		
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