# When is Evidence of Evidence Evidence?

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- Richard Feldman [2, 3, 4] has been defending a principle whose slogan is: "evidence of evidence is evidence" (EEE).
- He uses the (EEE) principle to support a conciliationist position regarding the epistemology of peer disagreement.

> …even if it is true that the theists and the atheists have private evidence, this does not get us out of the problem. Each may have his or her own special insight or sense of obviousness. But each knows about the other's insight. Each knows that this insight has evidential force. And now I see no basis for either of them justifying his own belief simply because the one insight happens to occur inside of him. **A point about evidence that plays a role here is this: evidence of evidence is evidence. More carefully, evidence that there is evidence for $p$ is evidence for $p$. Knowing that the other has an insight provides each of them with evidence.**

- My aim today will be to take you through the recent dialectic concerning (EEE). The state-of-the-art on this dialectic is the recent *Noûs* paper by Tal & Comesaña [9].
- I'll be following their discussion (but skipping some details).





- I'll use T&C-style notation for expressing variants of (EEE).
  - $E$ evidentially supports $p$ to degree $\alpha \triangleq^{\text{def}} \mathsf{S}(E, p, \alpha)$.
    - $\alpha > 0$ is *support*; $\alpha < 0$ is *counter*-support; and, $\alpha = 0$ is *neutrality*.
  - $E$ is true $\triangleq^{\text{def}} \mathsf{T}(E)$.
  - $S$ possesses evidence $E \triangleq^{\text{def}} \mathsf{P}(S, E)$.
    - Following T&C, we'll assume that (all) evidence is *factive* — *i.e.*, that $\mathsf{P}(S, E)$ and $\mathsf{S}(E, p, \alpha)$ each *entail* $\mathsf{T}(E)$. This allows us to drop $\mathsf{T}(E)$ from evidential claims, for simplicity
  - When we make statements involving these three primitives, we'll assume that all implicit quantification is universal — *i.e.*, we'll explicitly state only the existential quantifiers.
- Here are 2 simple examples, expressed in our T&C-language.
  - "There exists some evidence *for* $p$" $\mapsto (\exists_E)(\exists_{\alpha>0})\,\mathsf{S}(E, p, \alpha)$.
  - "$S$ possesses some evidence *against* $p$" (*de dicto*) $\mapsto (\exists_E)(\exists_{\beta<0})\,[\mathsf{P}(S, E)\,\&\,\mathsf{S}(E, p, \beta)]$.
- With our language in place, we're ready to examine (EEE).





- Initial renditions of (EEE) — as discussed by Feldman [4] and myself [5] — were both naïve and ambiguous. For instance:

(EEE) If $E$ is evidence for the claim that $S$ possesses some evidence for $p$ then $E$ is evidence for $p$.

- As T&C point out, this initial statement of (EEE) is ambigious between a *de re* reading and a *de dicto* reading.
- First, the *de re* and *de dicto* readings of (EEE) in English.

($\text{EEE}_{dr}$) If (a) $E$ is evidence for the claim that $S$ possesses $E'$, and (b) $E'$ is evidence for $p$, then $E$ is evidence for $p$.

($\text{EEE}_{dd}$) If $E$ is evidence for: $\exists_{E'}$ such that (a) $S$ possesses $E'$ and (b) $E'$ is evidence for $p$, then $E$ is evidence for $p$.

- In our T&C-style formalization, these renditions of (EEE) are:

($\text{EEE}_{dr}$) $\mathsf{S}(E, \mathsf{P}(S, E'), \beta > 0)\,\&\,\mathsf{S}(E', p, \alpha > 0) \Longrightarrow (\exists_{\gamma>0})\,\mathsf{S}(E, p, \gamma)$.

($\text{EEE}_{dd}$) $\mathsf{S}(E, (\exists_{E'})(\exists_{\alpha>0})\,[\mathsf{P}(S, E')\,\&\,\mathsf{S}(E', p, \alpha)], \beta > 0) \Longrightarrow (\exists_{\gamma>0})\,\mathsf{S}(E, p, \gamma)$.

- Both of these naïve renditions of (EEE) are false. My proposed counterexample to (EEE) was as follows [5, 9].

  > **Card**. John ($S$) has observed a card that was drawn at random from a standard deck. Let $E \stackrel{\text{def}}{=}$ the card is black, $E' \stackrel{\text{def}}{=}$ the card is the ace of spades, and $p \stackrel{\text{def}}{=}$ the card is an ace.

- $E$ is evidence for ($X$) John observed the ace of spades [$\Pr(X \mid E) = 1/26 > 1/52 = \Pr(X)$], which *entails* $p$. But, $E$ is (evidentially) *neutral* regarding $p$ [$\Pr(p \mid E) = 1/13 = \Pr(p)$].
- So, **Card** is a counterexample to ($\text{EEE}_{dr}$). Unfortunately, I did not distinguish ($\text{EEE}_{dr}$) and ($\text{EEE}_{dd}$). And, as T&C point out, **Card** is *not* a counterexample to ($\text{EEE}_{dd}$).

☞ $E$ is *not* evidence for the claim that John possesses *some* $p$-entailing evidence. That is, $E$ is *not* evidence for

($X'$) John observed an ace.

- For $E$ is *neutral* regarding $X'$ [$\Pr(X' \mid E) = 1/13 = \Pr(X')$].





- William Roche [6] has shown how to modify **Card**, so as to transform it into a counterexample to ($\text{EEE}_{dd}$).

  > **Card***. Just like **Card**, except that, unbeknownst to John, the card will be shown to him *iff* it is the Ace of Spades.

- In **Card***, $E$ *is* evidence for the claim that John possesses *some* $p$-entailing evidence. That is, now $E$ *is* evidence for $X'$. This is because, in **Card***, $\Pr(X' \mid E) = 1/26 > 1/52 = \Pr(X')$.

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- At this point in the dialectic, T&C urge us to consider more sophisticated renditions of (EEE). They begin by distinguishing *possession vs. existential* renditions of (EEE).
- The naïve renditions of (EEE) that we've been discussing involve *what evidence* ***an agent possesses***, but T&C introduce versions involving (only) *what evidence* ***there is***.
- That brings us to Part III of the talk — more sophistcated renditions of (EEE) and their role in epistemic disagreement.





- T&C's *existential* versions of ($\text{EEE}_{dr}$) and ($\text{EEE}_{dd}$) are:

($\text{EEE}^{\exists}_{dr}$) If $E$ is evidence for $E'$ and $E'$ is evidence for $p$, then $E$ is evidence for $p$.

($\text{EEE}^{\exists}_{dd}$) If $E$ is evidence for: $\exists_{E'}$ such that $E'$ is evidence for $p$, then $E$ is evidence for $p$.

- Counterexamples to ($\text{EEE}^{\exists}_{dr}$) are well-known [8, 1, 7]. Indeed, my own (*de re*) examples in [5] were modeled after them.

☞ As T&C point out, ($\text{EEE}^{\exists}_{dd}$) is (a) immune from existing (EEE)-counterexamples (both *de dicto* and *de re*), and (b) closer to Feldman's original idea regarding disagreement.

- First, let's see why ($\text{EEE}^{\exists}_{dd}$) avoids Roche's counterexample to ($\text{EEE}_{dd}$). In **Card***, $E$ is evidence for $X'$, but *not* for the claim ($X^*$) *there exists* entailing evidence for $p$.
- Note that ($X^*$) is equivalent to the claim ($p$) that the card *is* an ace. Thus, $\Pr(X^* \mid E) = 1/13 = \Pr(X^*)$. So, $E$ is $X^*$*-neutral*.





- While ($\text{EEE}^{\exists}_{dd}$) avoids Roche's counterexample (and mine), it has counterexamples of its own — *i.e.*, ($\text{EEE}^{\exists}_{dd}$) is false. Let $p$ be a contingent truth, and let $E$ be a contingent falsehood.

($\mathbb{N}$) $\exists$ evidence for $p$, and $\exists$ evidence against $p$ [$\mathbb{F}$ & $\mathbb{A}$].
[Formally: $(\exists_{E^+})(\exists_{\alpha>0})\,\mathsf{S}(E^+, p, \alpha)$ & $(\exists_{E^-})(\exists_{\beta<0})\,\mathsf{S}(E^-, p, \beta)$.]

- ($\mathbb{N}$) *entails* that ($\mathbb{F}$) there exists evidence for $p$. But, clearly ($\mathbb{N}$) is $p$*-neutral* (hence, *not evidence for* $p$). Thus — so long as ($\mathbb{N}$) is *true* — it will be a counterexample to ($\text{EEE}^{\exists}_{dd}$).
- To see that ($\mathbb{N}$) *must* be true (in *almost all* cases), reason as follows. Provided only that no logical combination of $\{p, E\}$ has zero (*a priori*, evidential) probability, $p \vee E$ will be evidence for $p$, and $\sim p \vee \sim E$ will be evidence against $p$.[1]
- To salvage (EEE), T&C go through one more iteration.

[1] T&C discuss claims like ($\mathbb{N}$), but they neglect to provide arguments that their versions of ($\mathbb{N}$) are *true*. This fills that lacuna in their discussion.

- At this point in the dialectic, T&C introduce the notion of a *defeater of the evidential support that E provides to p*.

  $D$ is a defeater of $E$'s evidential support for $p$
  $\stackrel{\text{def}}{=}$
  $E$ is evidence for $p$, but $E \,\&\, D$ is either neutral or against $p$
  $\stackrel{\text{def}}{=}$
  $(\exists_{\alpha>0})\,\mathsf{S}(E, p, \alpha)\ \&\ (\exists_{\beta\leq 0})\,\mathsf{S}(E \,\&\, D, p, \beta)$

- With this notion in hand, T&C give a diagnosis of what is going wrong with $(\text{EEE}^{\exists}_{dd})$ and its counterexample(s) ($\mathbb{N}$).
- The problem, according to T&C, is that, while

  (i) ($\mathbb{N}$) entails — and $\therefore$ supports — ($\mathbb{F}$) there is evidence for $p$.

  it is *also* true that

  (ii) ($\mathbb{N}$) entails ($\mathbb{A}$) there is evidence against $p$, and this *defeats* — in this case, *neutralizes* — ($\mathbb{F}$)'s support for $p$.

- More formally: (i) $(\exists_{\alpha>0})\,\mathsf{S}(\mathbb{F}, p, \alpha)$, *but* (ii) $\mathsf{S}(\mathbb{F} \,\&\, \mathbb{A}, p, 0)$.





- This diagnosis leads T&C to conjecture that the following rendition of (EEE) — which adds a "no defeat" clause to their $(\text{EEE}^{\exists}_{dd})$ — is what Feldman *should have* endorsed.

($\text{EEE}_{\text{T\&C}}$) If (a) $E$ is evidence that ($\mathbb{F}$) there is evidence for $p$ **and (b)** $E$ **is not a defeater of (**$\mathbb{F}$**)'s support for** $p$, then $E$ is evidence for $p$.

- While I am inclined to agree with much of what T&C say in their state-of-the-art study of the recent (EEE)-literature, I am not sure how ($\text{EEE}_{\text{T\&C}}$) advances Feldman's original aims.
- If the aim was to formulate a version of (EEE) which is both (independently) plausible and probative with respect to the conciliationist/steadfaster debate, then I'm not seeing it.

☞ Specifically, the probative value of ($\text{EEE}_{\text{T\&C}}$) trades on *the assessment of clause* **(b)** — *in cases of peer disagreement.*

- But, the apparent symmetrical nature of such cases seems (to me) to render ($\text{EEE}_{\text{T\&C}}$) otiose. Won't (true) epistemic peers see (hard) disagreements (*per se*) as implying *only* ($\mathbb{N}$)?






[1] Douven, I. 2011. "Further results on the intransitivity of evidential support," *Review of Symbolic Logic*.

[2] Feldman, R. 2007. "Reasonable religious disagreements," In L. Antony (*ed.*), *Philosophers without God: Meditations on Atheism and the Secular Life*, OUP.

[3] _____. 2011. "Evidence of evidence is evidence," Keynote lecture at *Feldmania: A Conference in Honor of Richard Feldman*, UT–San Antonio, March 2011.

[4] _____. 2014. "Evidence of evidence is evidence," in Matheson and Vitz (*eds.*), *The Ethics of Belief*, Oxford University Press, 284–300.

[5] Fitelson, B. 2012. "Evidence of Evidence is Not (Necessarily) Evidence," *Analysis*.

[6] Roche, W. 2014. "Evidence of Evidence Is Evidence under Screening-Off," *Episteme*.

[7] _____, W. 2015. "Transitivity and intransitivity in evidential support: Some further results," *Review of Symbolic Logic*.

[8] Salmon, W. C. 1975. "Confirmation and Relevance", In G. Maxwell & R.M. Anderson (*eds.*), *Induction, Probability, and Confirmation*, *Minnesota Studies in the Philosophy of Science, Vol. VI*, University of Minnesota.

[9] Tal, E. and Comesaña, J., 2015. "Is Evidence of Evidence Evidence?," *Noûs*.