Incorporating Fairness into Game Theory and Economics: scoped review

Igor Rivin · 24 November 2026 · AI-assisted source audit

A tie defeats Proposition 3; an exact game has no equilibrium under the original normalization. The author already limits the existence proof to continuous variants.

Reviewed edition: American Economic Review 83(5), 1993, pp. 1281–1302; scanned published article with a cover page.

This report publishes only reconciled findings with direct source and exact arithmetic checks. Other branches of the paper remain unaudited or unresolved. It makes no claim of priority or of an exhaustive search for corrections.

Checked findings

The paper defines kindness on physical p. 7 (printed p. 1286), fixes beliefs during deviations on pp. 8–9, and explicitly includes mixed strategies in footnote 8. Its kindness values lie in `[-1,1/2]`.

For Proposition 3, take the following payoffs and multiply all entries by any `X>0`:

	L	R
T	(1,2)	(0,3)
M	(2,2)	(0,0)
B	(4,0)	(0,0)

At `(T,L)` both players maximize the other's payoff and both kindness values are `1/2`. Switching from T to M preserves outgoing kindness while raising material payoff by X. The row utilities are `X+3/4` and `2X+3/4` at the fixed beliefs. Strictly positive kindness does not eliminate ties in the recipient's payoff. A material-best-on-the-extremal-face condition supplies the needed tie qualification for the baseline model.

For the original-specification existence question, Astra supplied a new two-action example, also checked here:

	L	R
T	(5,0)	(0,10)
B	(3,7)	(2,1)

Write `p=Pr(T)`, `q=Pr(L)`, and k_1, k_2 for the actual kindness values at consistent beliefs. Pure-response utility differences, with beliefs held fixed, are

$$D_1 = 4q - 2 + k_2 \operatorname{sign}(9 - 16q), \qquad D_2 = 6 - 16p + k_1.$$

Boundary equilibria are excluded by the global kindness bounds: `p=0` forces `q=1`, which forces `p=1`; `p=1` forces `q=0`, which forces `p=0`. The q-boundary cases give the same contradictions.

At an interior equilibrium, both differences must vanish and $5/16 \le p \le 13/32 < 1/2$. If `q<9/16`, the first player's kindness is negative, so the column player faces a dominated alternative and $k_2 = q - 1$. Then $D_1 = 5q - 3$, whose only zero, 3/5, is outside that region. At `q=9/16` the first recipient range vanishes but $D_1 = 1/4$. For `q>9/16` both conditional payoff segments are tradeoffs, giving $k_1 = 1/2 - p$, $k_2 = q - 1/2$ and $D_1 = 3q - 3/2 > 0$. These cases exhaust the mixed domain. The script independently enumerates the 15 exact affine sign cells, including the boundary values of the payoff comparisons; no numerical grid or tolerance is used.

The source's footnote 24 on physical p. 16 (printed p. 1295) expressly says that the cited existence argument applies to continuous variants. The example therefore refutes unrestricted existence for the original normalization, not the author's qualified result for other specifications. Astra's corrected smoothing and fixed-point proof are separately recorded candidate repairs. No claim is made here that this issue or this example is new to the literature.

Evidence and limits

The panel used independent Sol 6.2 and Fable 5.2 assessments, followed by non-blind Astra 6.2 adjudication. The coordinator checked the reported witnesses against the source and replayed exact rational calculations. This is not proof-assistant verification or a full-paper certificate. General repair proposals remain candidates until separately checked.

3 assessments are recorded for this paper; 0 initial responses retain source-access flags. The focused response accounts for every supplied source. Recorded usage for these packets is USD 2.7802, within the collection's USD 100 ceiling. No additional inference was used to prepare this publication.

The neutral source inventory preserves the complete PDF and text/OCR index, including sections and bibliography. The dependency graph covers selected source-attributed inputs; unmarked or unconnected claims have not thereby been verified.

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