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## **On the Travesty of the Tragedy of the Commons: Hardin's Nontrivial Error**

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Garrett Hardin's 1968 *Tragedy of the Commons* (1) remains one of the most frequently cited works across the spectrum of science — indeed, a visit to [http://www.sciencemag.org/feature/misc/top\\_articles/](http://www.sciencemag.org/feature/misc/top_articles/) reveals that this revolutionary communicate remains amongst *Science's* 'top articles'. But as great philosophers from Xenophanes to Socrates to Popper to Russell have all reminded us: "In all affairs it's a healthy thing now and then to hang a question mark on the things you have long taken for granted."

Hardin's enduring, highly influential (2) theoretical development presents a serious problem: it is not a single theory, but rather four major theories in a dark and stormy sea of ill-conceived and untenable auxiliary conjecture. Moreover, the solid core of Hardin's central thesis was simply a *restatement of a previously published theory* (3 ; cf. 4), the promethean vision of William Forster Lloyd, Drummond chair of political economy at the University of Oxford, delivered in two lectures on the checks to population in 1832 and published in 1833 (3). Alas, to add insult to injury, Lloyd's advancement of the marginal theory of value was also sadly neglected (5).

To his credit, Garrett Hardin focused much attention upon this useful, illustrative, abstract conceptual tool (1) — as have thousands of dedicated problem-solvers who have followed his footsteps. However, upon reflexion (6) of a talk delivered on scientific method and a particularly nasty strain of the tragedy of the commons which infects islands and islanders alike (7), it became clear that Hardin (1) *also* tabled three *other* significant hypotheses — two of which may, perhaps, be defended. The third hypothesis, however, is readily falsified, *reductio ad absurdum*, in the light of evolutionary game theory (8). Briefly, in five short pages, Hardin (1) erected a conjectural house of cards upon small, scenic, sandy patches of theoretical shoreline which have long-since subsisted into the sea (8). This creates a special problem for those who have cited and continue to cite 'Hardin 1968' without considering the wide array of grave, logical implications this misattribution freights. Hardin's Nontrivial Error and the travesty of the tragedy of the commons is indeed a serious affair (6 ; 8) which will be further detailed, illuminated, and contextualized in a forthcoming issue of the *Proceedings* of The Linnean Society of London (9).

But the clear and obvious solution is to simply give credit where credit is due (3).

"This sketch is most imperfect; but in so short a space I cannot make it better. Your imagination must fill up very wide blanks" (10, p. 50).

Matt Funk, FLS<sup>§</sup>

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| <ol style="list-style-type: none"> <li>1. Hardin G (1968) The Tragedy of the Commons <i>Science</i> 162:1243-1248.</li> <li>2. Fersht A (2009) The most influential journals: Impact Factor and Eigenfactor <i>Proc Natl Acad Sci USA</i> 106:6883-6884.</li> <li>3. Lloyd W (1833) Two Lectures on the Checks to Population. Reprinted in <i>Population and Development Review</i>, Vol. 6, No. 3, Sep., 1980:473-496.</li> <li>4. Hardin (1977) <i>Ethical Implications of Carrying Capacity</i> (The Garrett Hardin Society, Petosky).</li> <li>5. Gordon B (1966) W.F. Lloyd: A Neglected Contribution <i>Oxf Econ Pap</i> 18:64-70.</li> <li>6. Funk M (2009) On the Truly Noncooperative Game of Island Life: Introducing a Unified Theory of Value &amp; Evolutionarily Stable Island Economic Development Strategy. Appendix VII:</li> </ol> | <ol style="list-style-type: none"> <li>7. Funk M (2009). A lecture on checks to population and the tragedy of the commons: "Solving Island Problems with Island Solutions: Amplification by Compression, Complex Systems, &amp; Cultural Evolution." Delivered 26 January 2009, Research Methods &amp; Designs for Island Studies (IST 604):</li> <li>8. Funk M (2008) On the Truly Noncooperative Game of Life on Earth: In Search of the Unity of Nature &amp; Evolutionarily Stable Strategy. <i>MPRA</i> 17280:1-21.</li> <li>9. Funk M (forthcoming) On the Origin of Mass Extinctions: Darwin's Nontrivial Error <i>Proc Linn Soc</i>.</li> <li>10. Darwin C (1858) Letter to Asa Gray of Boston, mailed from Down, 5 September 1857. <i>Proc Linn Soc</i> 3:45-62.</li> </ol> |
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§ I only know that he who forms a tie is lost. The germ of corruption has entered into his soul.  
—Joseph Conrad, *Victory: An Island Tale*, 1915

⇒ The Author declares no conflict of interest.

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