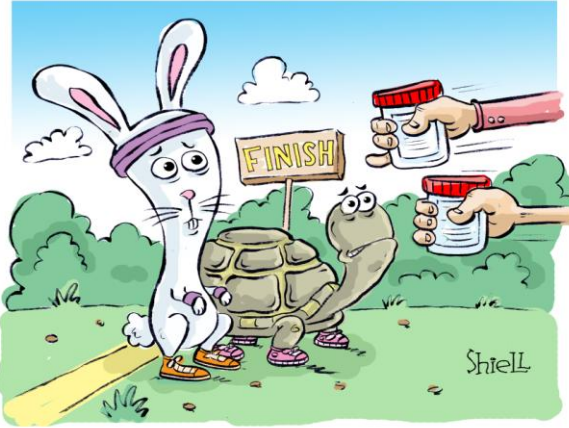


Teaching externalities with the performance-enhancing drug (PED) game: an experimental approach

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AEA Poster Session: Active Learning Strategies for the Undergraduate Economics Curriculum
Denver, Colorado, January 8, 2011; correspondence to: ddamianov@utpa.edu



"AFTER THE BIG RACE THE TORTOISE AND THE HARE ARE ORDERED TO PROVIDE URINE SAMPLES"

Theoretical setting

- Budget: B
- PED cost: c
- Prize: W

•Payoff without PED testing
 prob. win. with PED $\times W + (B - c)$
 prob. win. without PED $\times W + B$

•Payoff with PED testing
 prob. win. with PED $\times (1 - \text{prob det.}) W + (B - c)$
 prob. win. without PED $\times W + B$

Athletes (students) learn their ability x
 (random draw between 0 and 1)

Athletes decide whether to enhance their performance (PED use)

YES
 performance is $f(x)$

NO
 performance is x

The highest performing athlete wins the contest

Discussion questions

1. Do athletes using PEDs get an unfair advantage?
2. Does PED use undermine the reputation of sports?
3. Does PED use create a positive or a negative externality?
4. Which parties is the externality exerted upon?
5. How can we measure the magnitude of the externality?
6. Are PED damaging to athletes' health?
7. How should we regulate our classroom experiment?
8. How should PED testing be conducted?
9. What should be the penalties for PED use?
10. How to design PED free sports contests?

Theoretical solution

