Errata for Eric Rasmusen's Games and Information, Fourth Edition, arranged by page number. Updated: December 2, 2020.

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I have marked some errors on pdf files up on the web. They can be reached via http://www.rasmusen.org/GI/errata.htm. I list the page numbers of such errors below.

If you find any new errors, please let me know, so future readers can be warned. Do not be shy– if you think it might be an error, do not feel you have to check it out thoroughly before letting me know. It's my duty to make sure and to be clear, not yours.

I can be reached at Eric Rasmusen, Indiana University, Kelley School of Business, Rm. 438, 1309 E 10th Street, Bloomington, Indiana, 47405-1701. Office: (812) 855-9219. Fax: 812-855-3354. Erasmuse@Indiana.edu. The webpage for *Games and Information* is at http://rasmusen.org/GI/.

page xxix: "Michael Mesterton-Gibbons (Pennsylvania)" is wrong. It should be "Mike Mesterton-Gibbons (Florida State)".

page 20, clarification. Replace: "Note that s_i^d is not a dominated strategy if there is no s_{-i} to which it is the best response, but sometimes the better strategy is s_i' and sometimes it is s_i''."

with

If there is no s_{-i} to which a strategy s_i^d is the best response, that does not necessarily mean it is a dominated strategy. Instead, it might be that for some values of s_{-i}, s_i' is a better response than s_i^d and for other values s_i' is not but s_i'' is, in which case s_i^d is *not* a dominated strategy.

page 23, line 9 says "This is what the arrows are showing" in table 1.3, but table 1.3 does not show any arrows (which are introduced later in this edition).

p. 24 discusses what would happen if Kenney moved first. Implicitly, it is using the idea of subgame perfectness, ignoring what would happen in the part of Imamura's strategy that is off the equilibrium path, and, in fact, his strategies are not single actions in the sequential game; they are rules such as $(North|North, South|South)$. That would bring forward the idea of subgame perfectness brought up in Chapter 4, however, and at this point the reader hasn't even gotten to Nash equlibrium.

page 29, paragraph 2, line 3: (Blame, Blame) should be (Confess, Confess). I didn't fully update the notation from an earlier edition which used Blame as the action in the Prisoner's Dilemma.

page 37. Problem 1.8, choice (4) legal settlement game. Replace with "the Battle of Bismarck Sea"

page 38."uptil" typo in Prob. 1.10.

p. 73, chapter 3. The text says that the game in Table 3.2 is zero-sum, but it isn't. It could be made zero-sum by changing -6 to -4 and -9 to -4 and the text analysis will still be correct.

p. 76, chapter 3. A clarification. I am assuming that the one-time value of winning the market in the war of attrition is 3.

If, instead, the prize is the perpetuity X/r with X paid at the END of each period, then the dropping-out probability is $\theta = 1/(1+X/r) = r/(X+r)$ and $V = [(1+r)/(r+\theta)](x/r)$. This θ rises with the interest rate r, and the value falls.

p. 79, chapter 3. In Figure 3.1, the horizontal axis is at $\pi_a = 0$ (though the zero isn't marked) and should be labelled x_a, not x_1. Where x_c is labelled, the middle of the three open dots should be filled in— the payoff is indeed $V/2 - x_a$ there.

p. 90. Chapter 3. I say that Apex's Stackelberg output "only equals the monopoly output by coincidence, due to the particular numbers in this example." More precisely, it is due to the linearity of the demand here– we can change the parameters and still keep the coincidence.

p. 96. Part (1) should be "exists, x=1,000" not "exists, -x = 1,000". See http://www.rasmusen.org/GI/errata/p96.pdf for a pageview.

p. 103, chapter 3. Problem 3.1b. Change "What are the two pure-strategy equilibria?" to "What are the two simplest pure-strategy equilibria?". This rules out equilibria such as "Smith stays in for 100 months, Jones drops out immediately". That equilibrium is non-perfect, but that concept only enters in Chapter 4.

p. 152. Chapter 5. "Set $P = 0$ in the general Prisoner's Dilemma in table 1.9, and assume that $2R > S + T$."

should be

"Set $P = 0$ in the general Prisoner's Dilemma in table 1.10, and assume that $2R > S + T$."

p. 185, 187. (7.1) and (7.9) should say $U(e, \tilde{w}(e)) = \overline{U}$ instead of $U(e, w(e)) = \overline{U}$.

p. 186. The third line should say "see section 14.4", not "see section 13.4".

p. 213, line 12. "If there was some chance" should be "If there were some chance".

p. 215. "constraint that $log(w-\alpha)$" should be "constraint that $log(w)-\alpha$". See http://www.rasmusen.org/GI/errata/p215.pdf for an image of the page.

p. 222-225. See also http://www.rasmusen.org/GI/errata/p.222-225.pdf, which has the next lines of errors corrected on it.
p. 222. In Figure 8.1 the straight line from 6 to 6 should be labelled $\pi_i = 3$ and the straight line from 12 to 12 should be labelled $\pi_i = 0$.
p. 224. In the first paragraph replace "$\pi_i = 6$" with "$\pi_i = 3 = 6 + .5(-6)$".
p. 224. The text says that Careless is a "dominant strategy" for Smith. It is not dominant; it is an optimal response in equilibrium if he is fully insured.
p. 225. Near the bottom replace "premium of 6 and a payout of 8" with

"premium of 6 and a payout of 10".
The deductible in point 1 of near the bottom of the page should be two, not four, and the co-insurance rate should be one-sixth, not one-third.

p. 225. (Extra explanation) To see why Smith prefers his endowment ω to C2, note that he is indifferent between ω and (4,4) if he is Careful. C2 only gives him (3,3) plus epsilon because he is Careless there. We don't know the exact shape of the dotted indifference curve that Smith has when he is careless, but we know that regardless of the probability of an accident, (4,4) is better than (3,3). Thus,the payoff from C2- careless is worse than from (4,4)-careful, which is equal to the payoff from ω-careful.

p. 231. line 19. The agent's payoff function in the paragraph below (8.20) should be $\pi_{agent} = w^* - e_1^2 - e_2^2 \geq 0$, not $\pi_{agent} = w^* + w - e_1^2 - e_2^2 \geq 0$.

p. 232, line 12. "salesmen" should be "salesman".

p. 235. p. 235. Replace the 3 paragraphs starting with "These can be solved..." with the following:

" These can be solved to yield $m_1 = 2e_1^*$ and $m_2 = 2e_2^*$. We still need to determine the base wage, $\overline{m}$. Substituting into the participation constraint, which will be binding, and recalling that we defined the agent's reservation expected wage as $w^* = e_1^2 + e_2^2$,

$$\begin{aligned} \pi_{agent} &= \overline{m} + e_1 m_1 + e_2 m_2 - e_1^2 - e_2^2 = 0 \\ &= \overline{m} + e_1^* (2e_1^*) + e_2^* (2e_2^*) - w^* = 0 \qquad (8.33) \\ &= \overline{m} + 2w^* - w^* = 0 \end{aligned}$$

so $\overline{m} = -w^*$.

The base wage is thus negative; if the principal finds the agent shirking when he monitors, he will pay him less than zero. That is surprising when $e_1^* + e_2^* < 1$, because then the principal wants the agent to take some leisure in equilibrium, rather than have to pay him more for a leisureless job. It is less surprising that the base wage is positive when $e_1^* + e_2^* = 1$; that is, when efficiency requires zero leisure. Why pay the agent anything at all for inefficient behavior?

The key is that the base wage is important only for inducing the agent to take the job and has no influence whatsoever on the agent's choice of effort. Increasing the base wage does not make the agent more likely to take leisure, because he gets the base wage regardless of how much time he spends on each activity. If $e_1^* + e_2^* = 1$, then the agent chooses zero leisure, knowing that he would still receive his base pay for doing nothing, because the incentive of m_1 and m_2 is great enough that he does not want to waste any opportunity to get that incentive pay."

p. 244. Replace move 3 in the order of play with:

"3. Nature chooses the state of the world to be Bad with probability .5 and Good with probability .5.
4. If the state of the world is Bad, the low-ability agent produces 0 and the high-ability chooses output from [0,10]. If the state of the world is Good, both agents choose output from [0,10]."

Otherwise, the principal can do better by paying more for low output than for high output, using the contracts $W_1 = (4,2), W_2 = (0,2)$.

p. 249. In the box on page 249: the "buyer" (just below PAYOFFS) should be "seller."

p. 249. The sentence, "The game will have one buyer and one seller, but this will simulate competition between buyers, as discussed in Section 7.2, because the seller moves first," should be, "The game will have one buyer and one seller, but this will simulate competition betweensellers, as discussed in Section 7.2, because the buyer moves first."

(I need to check Lemons IV, because I think it might not correspond to the original order of play once there are more buyers than sellers. I think it's probably wrong there.)

page 256, box. "PIAYERS" should be changed to "PLAYERS."

page 258. Clarify by changing the middle paragraph to read like this (boldface shows the change from in the book):

Contract C_5, however, might not be an equilibrium either. Figure 9.7 is the same as figure 9.6 with a few additional points marked. If one firm offered C_6, it would attract both types, $Unsafe$ and $Safe$, away from C_3 and C_5, because it is to the right of the indifference curves passing through those points. Would C_6 be profitable? That depends on the proportions of the different types. **If the proportion of $Safe$'s is 0.6, the zero-profit line for pooling contracts is ωF and C_6 would be unprofitable. That is the assumption on which figure 9.6's equilibrium is based. If the proportion of $Safe$s is higher, the zero-profit line for pooling contracts would be $\omega F'$, and C_6, lying to its left, becomes profitable.** But we already showed that no pooling contract is Nash, so C_6 cannot be an equilibrium. Since neither a separating pair like (C_3, C_5) nor a pooling contract like C_6 is an equilibrium, no equilibrium whatsoever exists.

page 280, 5th line from the bottom: zero "is" that case "is" should be changed to "in."

p. 285. In the out of equilibrium belief in Partial Pooling Equilibrium 3, the last expression should be "$m \in [3, 10]$", not "$a \in [3, 10]$".

page 286, line 1: change "a a partially pooling equilibrium" to "a partially pooling equilibrium".

p. 310, Figure 10.8. The value of $x - c_X$ should be less than $-c_N$, so the diagram should like the one I have on the web at `http://www.rasmusen.org/GI/errata/p310.pdf`. This does not affect any of the discussion in the text. Here is why $x - c_X < -c_N$. Let c_X^* be the equilibrium cost level in Procurement I, the game with observability, and c_X^{**} be the same for Procurement II. We know that $c_X^{**} > c_X^*$ and that the normal firm's cost is the same: $c_N^{**} = c_N^*$. From p. 307, 11 lines from the bottom, $c_N^* = c_X^* - x$. Thus, $c_N^{**} = c_X^* - x < c_X^{**} - x$, so $-c_N^{**} > x - c_X^{**}$.

page 321. The caption on Figure 11.1 should be "Education I: the single crossing property".

page 328. Just above "Separating Equilibrium 4.2" a double upper bar is missing for s. The sentence should be "The equilibrium is Separating Equilibrium 4.2, where $s^* \in [\overline{s}, \overline{\overline{s}}]$."

p. 332, box. in explaining the order of play, "choose" in item 2 should be "chooses."

p. 352, chapter 11. Problem 11.11 need italics for the variables.

p. 358. Chapter 12. "If Jones moves first, the unique Nash outcome would be (0, 1)," should be

''If Jones moves first, the unique equilibrium outcome would be (0, 1),"

p. 359. The caption "Figure 12.1 (a) Nash Bargaining Game (b) Splitting a Pie."

should be

"Figure 12.1 (a) Splitting a Pie (b) Nash Bargaining Game "

p. 359. Both figures should have their shaded areas labelled as X. It would be useful to label the origin in the left-hand figure as $\overline{U}_s, \overline{U}_j$.

chapter 13 generally: there is different notation for probabilities prob(.) in some cases Pr(.) in others. It makes no difference, but I should have been consistent.

p. 367. In the game "Two-Period Bargaining with Incomplete Information," the equilibrium is given as

Buyer$_{100}$: Accept if $p_1 \leq 104$. Accept if $p_2 \leq 100$.
Buyer$_{150}$: Accept if $p_1 < 150$. Accept with probability $\theta \leq 0.6$ if $p_1 = 154$. Accept if $p_2 \leq 150$.
Seller: Offer $p_1 = 154$ and $p_2 = 150$.

This is not an equilibrium, in fact, since the seller would deviate to $p_1 = 154 - \epsilon$ so as get the Buyer$_{150}$ to buy with probability one. To fix it, we need to specify that Buyer$_{150}$ only accepts prices below 154 with probability .6, and if Seller has deviated and offered $p_1 < 154$, he mixes between high and low prices in the second period.

The explanation given in the book slides by the fact that Seller's second-period price must depend on his first-period price in a perfect Bayesian equilibrium. If his choice of p_1 induces Buyer$_{150}$ to buy with probability one, Seller must rationally switch to $p_2 = 100$— but knowing that, Buyer$_{150}$ wouldn't accept p_1, a paradox that necessitates a mixed strategy. Thus, the equilibrium should be:

Buyer$_{100}$: Accept if $p_1 \leq 104$. Accept if $p_2 \leq 100$.
Buyer$_{150}$: Accept if $p_1 < 150$. Accept with probability $\theta \leq 0.6$ if $p_1 = 154$. Accept if $p_2 \leq 150$.
Seller: Offer $p_1 = 154$. Offers $p_2 = 100$ with probability $f(p_1) = \frac{154-p_1}{50}$ and $p_2 = 150$ otherwise.

The seller mixes between offering $p_2 = 100$ with probability $f(p_1)$ and $p_2 = 150$ otherwise. He is willing to mix because he is indifferent between the two. We need to choose $f(p_1)$ to make the Buyer$_{150}$ indifferent between accepting and rejecting p_1. Thus, we must choose $f(p_1)$ to equate

$$\pi_{Buyer_{150}} \textit{ accepts } p_1) = 150 - p_1$$

$$\pi_{Buyer_{150}} \textit{ rejects } p_1) = 150 - f(p_1)(100) - (1 - f(p_1)(150) - 4$$

so

$$p_1 = f(p_1)(100) + (1 - f(p_1)(150) + 4$$

so

$$f(p_1) = \frac{154 - p_1}{50},$$

for $p_1 \in [104, 154]$, with $f(p_1) = 1$ for $p_1 < 104$. Then the seller has no motive to deviate to charge a price less than $p_1 = 154$, because it would still only result in 1/6 of the $Buyer_{150}$'s accepting.

p. 419. Missing parentheses in $p_i = p_{(n)} + s_i/2$. It should read:

Equilibrium: If no bidder has quit yet, Bidder i should drop out when the price rises to s_i. Otherwise, he should drop out when the price rises to $p_i = (p_{(n)} + s_i)/2$, where $p_{(n)}$ is the price at which the first dropout occurred.

p. 420, top of page. Missing parentheses in $p_i = p_{(n)} + s_i/2$. It should read:

In cases (b) and (c), his estimate of the value is $p_{(i)} = (p_{(n)} + s_i)/2$, since $p_{(n)}$ and s_i are the extreme signal values and the signals are uniformly distributed, and that is where he should drop out.

The price paid by the winner will be the price at which the second-highest bidder drops out, which is $(s_{(n)} + s_{(2)})/2$.

p. 420, bottom of page. More missing parentheses. Should be:

Equilibrium: Bid $p_i = s_i - \left(\frac{n-2}{n}\right) m$.

p. 421, middle of page. More missing parentheses. Should be:

He will bid the value v which solves equation (13.73), yielding the optimal strategy, $p_i = s_i - \left(\frac{n-2}{n}\right)(m)$.

On average, the second-highest bidder actually has the signal $Es_{(2)} = v + \left(\frac{n-3}{n+1}\right) m$, from equation (13.70).

p. 469, Gaskins note...“future..in the future” delete one of the futures.