Errata


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• Chapter 1
  - Typo: “they know that they like” should be “they know what they like”
  - Typo: “your don’t know” should be “you don’t know”
  - Typo: “$x_k$ ad $x_{k+1}$” should be “$x_{k}$ and $x_{k+1}$”
  - Typo: In the section on uncertainty, the last example: $l_2 = (0.1, 0.2, 0.7)$ is the correct lottery instead of $(0.1, 0.7, 0.2)$.
  - In the solutions to Exercise 2, part 2 should be “yes, the best set is a singleton: team A.”

• Chapter 2
  - Typo: “negative quality of a good” should be “negative quantity of a good”
  - Typo: Missing 0 in the definition of the set of allocations $a$
  - Solution to exercise 1: In the solution, the equation should be $3(10-x_{11}) = 2(10-x_{12})$
    which along with the equation $3x_{11} + 2x_{12} = 48$ gives the point $(29/3, 19/2)$ where 1’s indifference curve intersects the Pareto locus, instead of the incorrect $(9, 8.5)$.

• Chapter 3
  - Typo: “until supply equals demand for both goods, that is, until the desired bundles $x_1$ and $x_2$ of the two traders coincide,” should be “until supply equals demand for

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1We are grateful to Jean-Yves Gerardi, Jeongbin Kim, Andrés Salamanca, and the students in the ECON 1170 course at Brown for their careful reading, which led to catching these typos and errors.
both goods, that is, until the desired bundles $\hat{x}_1$ and $\hat{x}_2$ of the two traders clear the markets.”

– Typo: “whether it is or is not” has a missing opening paren: “(whether it is or is not”

– Typo: “Combining (iii) with Observation 2,” should be “Combining (iii) with Observation 1,”

– Typo: In the definition of convex indifference curves: $u_i$ where the subscript should be simply $i$, and also the inequality of utilities should be $u_i(z_i) \geq u_i(y_i)$.

• Chapter 5

– Typo: In “If firm $k$ produces goods $j$ as an output” “goods” should be “good”

– Typo in example: only occurs in $y_1$. The original vector was (-3, 3,-6) and the correction should be (-1,3,-6). Then, now, $z_1=(-2,4,-6)$ cannot dominate $y_1$.

– Typo in discussion after first welfare theorem: “eduction” should be “education.”

– Typo in the solution for exercise 5.1.a: In the solution, one possible set of production vectors for firm 1 is given as (1/4, -1/27, -27/8), but the correct vector is (3/4,-1/27,-27/8). Thankfully, this does not change the solution in the part (c): in other words, the allocation where firm 1 uses 1 unit less of labor and firm 2 uses 1 unit more still produces the net output of good 1 which is strictly higher as compared to the initial plan.

• Chapter 6

– Delete the following sentence, which makes the example confusing: “either you get exactly three affirmative RSVP’s, or more than three, or less than three. Indeed,”

– With the definition provided of the ex-post core, the claim that the ex-ante core is included in the ex-post core is incorrect. For this inclusion, ex-post blocking must be defined so that in every state, there is ex-post blocking, perhaps with indifference, with one state in which ex-post blocking has a strict inequality at least for one agent. However, as defined, the ex-post core might be “too small” because ex-post blocking is made much easier; see Salamanca (2019).
• Chapter 7

  - Typo: “a quantity g of the second good” should be “a quantity g of the first good” and actually I would delete all references to the gift g in this example, because it makes it unnecessarily confusing.

  - In solution to Exercise 1, part [c], $T_2$ should be 1/6, not 2/3 as it says now.

• Chapter 8

  - Typo: “$(t_1, t_2)$” should be “$(t_1, t_2)$” just a typo in the subscript.

  - Rewrite the proof of the Clarke-Groves demand-revealing tax scheme using notation as in the slides.

• Chapter 9

  - In the solution to Exercise 1, the proof of $xSy$ implies $xNy$ is incorrect. Here’s a correct proof:

    Since $xSy$, we know that $xKy$ and not $yKx$. Since $xKy$, there exists $z \in S(x)$ such that $zPy$. That is, from $z \in S(x)$, we know that $\sum_{i=1}^{n} z_i = \sum_{i=1}^{n} x_i$, and hence, since $zPy$, we have that $z_i \geq y_i$ for all $i$, with at least one strict inequality. From here, we can conclude that $\sum_{i=1}^{n} x_i = \sum_{i=1}^{n} z_i > \sum_{i=1}^{n} y_i$.

    Knowing that not $yKx$ simply leads to the inequality $\sum_{i=1}^{n} y_i \leq \sum_{i=1}^{n} x_i$, and we already know that its strict version holds.

    Now take any $w \in S(y)$, i.e., $\sum_{i=1}^{n} w_i = \sum_{i=1}^{n} y_i$. Clearly, for each such $w$, there exists $z \in S(x)$ such that $zPw$, since $\sum_{i=1}^{n} x_i > \sum_{i=1}^{n} y_i$. That is, $xNy$.

• Chapter 10

  - Solution to problem 1.b, where We are asked to find a pair of points $x$ and $y$ such that $x$ is fair and $y$ is not, and $y$ Pareto dominates $x$. In the solution, the proposed $y$ does not Pareto dominate $x$ as agent 1 is strictly worse off under $y$. An easy solution is to pick $x_1 = (0, 1)$, $x_2 = (1, 0)$, $y_1 = (0, 0)$, and $y_2 = (1, 1)$.

• Chapter 13
– Typos in Table 13.1: In the fourth row and fourth column for individual 1, his preference is given as yxz but it should be yzx. In the fourth row and first column for individual 2, his preference is given as xyx, but it should be xyz. In the fourth row and third column for individual 2, his preference is given as yzx, but it should be yxz.

– Solution to Exercise 2, part [c.]: In order to prove that it is acyclic, we argue by contradiction. Suppose we have a cycle in the strict social preference.

We first consider a cycle in which alternative $x_0$ is involved, i.e.,

$$xPyPzPx_0 Px.$$

Since $xPy$, we know that $xP_1 y$. Similarly, $yP_1 z$ and $x_0 P_1 x$.

Since $zPx_0$, we know that $zP_1 x_0$, $zP_2 x_0$, and either $zP_3 x_0$ or $zP_4 x_0$. In particular, $zP_1 x_0$.

From all this, we conclude that

$$x_0 P_1 xP_1 yP_1 zP_1 x_0,$$

contradicting that person 1 has transitive preferences.

Finally, suppose the cycle does not involve $x_0$, i.e.,

$$xPyPzPx,$$

but then it must be that

$$xP_1 yP_1 zP_1 x,$$

also contradicting that person 1 has transitive preferences.

• Chapter 14

– Solution to Exercise 1:

It can be written much shorter: recall from the text that $v_i \geq 0$ for all $i$.

Case 1. Suppose $\sum_{j\neq i} \tilde{v}_j < C$. 
1.1: Suppose $v_i + \sum_{j \neq i} \tilde{v}_j \geq C$. Then, by telling the truth, agent $i$ is pivotal and changes the public decision from “no bridge” to “bridge.” Her after-tax utility from doing so is

$$v_i - \frac{1}{n-1} \sum_{j \neq i} \tilde{v}_j - C + \sum_{j \neq i} \tilde{v}_j,$$

while from lying, the only relevant constraint to check is her utility is “no bridge” results after her announcement, and that is

$$-\frac{1}{n-1} \sum_{j \neq i} \tilde{v}_j.$$

The difference of the first minus the second is at least zero because $v_i + \sum_{j \neq i} \tilde{v}_j \geq C$.

1.2: Suppose $v_i + \sum_{j \neq i} \tilde{v}_j < C$. Then, by telling the truth, the bridge would not be built and he would get a utility

$$-\frac{1}{n-1} \sum_{j \neq i} \tilde{v}_j.$$

If she were to lie, the relevant constraint is to check what would happen were the bridge built after he lie, and that would be

$$v_i - \frac{1}{n-1} \sum_{j \neq i} \tilde{v}_j - C + \sum_{j \neq i} \tilde{v}_j.$$

The difference between the first and the second expression is positive, given the inequality in this case 1.2.

Case 2. Suppose $\sum_{j \neq i} \tilde{v}_j \geq C$. Then the bridge would be built regardless of $i$’s announcement, and $i$’s tax would be $\frac{1}{n-1} \sum_{j \neq i} \tilde{v}_j$, also independent of $i$’s announcement. In particular, $i$ has no incentive to lie either.

Now that we know that agents tell the truth, if the bridge is built, even if the tax collections are the lowest possible, i.e., when no agent is pivotal, the tax revenues would be

$$\sum_{i} \frac{1}{n-1} \sum_{j \neq i} v_j = \sum_{i} v_i \geq C.$$

- Chapter 15
  - Typo $M^*$ should be $m^*$ in the proof of Maskin’s Theorem 1 (necessity).
References