Non-differentiability of Payoff Functions and Non-uniqueness of Nash Equilibria CORRECTIONS AND SUPPLEMENTS

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Corrections:

1. *Page 732, column 1, line 23* $\downarrow$: $\ldots = \mathcal{T}^i_-(x^i, \varphi^i(\mathbf{x}))$.
2. *Page 732, footnote 4:* $\ldots I_- =]-3, 1[$ and ldots
3. *Page 733, column 1, Property* $A^i\geq$: For all $y^i \in \varphi^i(E)$ and $b^i \in E^i \cap X^i_+,\ a^i \in E^i \cap X^i_-$,

   $$\mathcal{T}^i_-(b^i, y^i) \geq \mathcal{T}^i_+(a^i, y^i) \ \Rightarrow\ b^i \leq a^i.$$

   Here $E^i = \{n^i \mid \mathbf{n} \in E\}$.
4. *Page 733, column 2, line 21* $\uparrow$: $\mathcal{T}^i_-(b^i, \varphi^i(\mathbf{b})) \leq \mathcal{T}^i_-(b^i, \varphi^i(\mathbf{a}))$.
5. *Page 733, column 2:* delete In Proposition 2 the third proof. (There is no 3).
6. *Page 733, column 2, line 3* $\uparrow$: is increasing, $\Phi(\mathbf{a}) \geq \Phi(\mathbf{b})$ holds. ...
7. *Page 734, column 1, line 18* $\downarrow$: $\ldots \Phi : E(\Gamma) \to \ldots$
8. *Page 734, column 1, line 20* $\downarrow$: $\mathbf{\Psi}(\Gamma) = (\Psi^1(\Gamma), \ldots, \Psi^N(\Gamma))$
9. *Page 734, column 1, line 21* $\downarrow$: ... value of $\Phi \restriction E(\Gamma)$. Note ...
10. *Page 734, column 1, lines 24/25* $\downarrow$: denoted by $\Psi(\Gamma) \in \mathbb{R}$. Below it will become ...
11. *Page 734, column 1, Lemma 2:* replace this lemma by the following

    Lemma 2: Consider $\Gamma \in \mathcal{G}^\star_1$ and let $i \in \mathcal{N}$. Suppose φ^i is strictly increasing in x^i and Y^i is an interval. Then: $\#\{n^i \mid \mathbf{n} \in E\} \geq 2 \ \Rightarrow\ \Psi^i(\Gamma) \in \mathrm{Int}(Y^i)$. $\diamond$
12. *Page 734, column 1, line 13* $\uparrow$: $\Psi^i \in \mathrm{Int}(Y^i)$. Q.E.D.
13. *Page 734, column 2, line 1* $\downarrow$: Because $\mathcal{T}^i_-$ is strictly increasing in its ...
14. *Page 734, column 2, line 10* $\downarrow$: ldots is strictly decreasing in it ...
15. *Page 734, column 2, line 15* $\uparrow$: ... is that Property $B^i_{1+} \wedge B^i_{1-}$ holds. $\diamond$
16. *Page 734, column 2, line 9* $\uparrow$: $\ldots \mathcal{G}^\star_1$ where all functions $\mathcal{T}^i_+, \mathcal{T}^i_-$ are
17. *Page 734, column 2, line 1* $\uparrow$: ... then E is convex.
18. *Page 735, column 1, line 7* $\downarrow$: So by Lemma 1(2), $\mathbf{x} \in E$.
19. *Page 735, column 1, line 9* $\downarrow$: $\mathbf{x} \in \Phi^{<-1>}(\mathbf{\Psi})$. By ...

20. *Page 735, column 1, line 11* $\downarrow$: $x^i \in r(X^i) \;\Rightarrow\; \mathcal{T}^i_-(x^i, \Psi^i) \geq 0$,
21. *Page 735, column 1, line 12* $\downarrow$: $x^i \in l(X^i) \;\Rightarrow\; \mathcal{T}^i_+(x^i, \Psi^i) \leq 0$.
22. *Page 735, column 1, line 19* $\downarrow$: Theorems 2 – 4 imply:
23. *Page 735, column 2, line 19* $\uparrow$: 2) If each $\mathcal{P}^i$ $(i \in \mathcal{Z})$ is differentiable, then in each Nash equilibrium each f^i $(i \in \mathcal{Z})$ ldots

Comments:

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Further reading:

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If you think that some other things should be added here, please let me know.