Corrections to "Opinion Dynamic Games Under One Step Ahead Optimal Control"

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We add a missing hypothesis, inadvertently omitted in [1], to Theorems 1, 2, and 3, namely that the sets of agents (nodes) influenced by players are disjoint. All the experimental results and simulations shown in the article satisfy the disjoint set hypothesis and remain valid, with no changes. The abstract and conclusion are modified to include the words "disjoint set" (of agents).

Equation (9) of [1] is obtained under the assumption that the players influence a disjoint set of agents, i.e., $\mathbf{b}_i^T \mathbf{b}_j = 0, i \neq j$. The corrections to the manuscript, resulting from this inadvertent omission, are as follows:

Abstract: First page, in the third sentence

- *Original*: The controls, influencing the opinions of agents, are exercised by entities called players, who specify targets, possibly conflicting, for agents.
- *Corrected*: The controls, influencing the opinions of agents, are exercised by entities called players, who specify targets, possibly conflicting, for *a disjoint set of agents*.

Conclusion: Page 10, in the first sentence

- *Original*: This article has shown that a OSAOC approach with a sequential, parallel, or asynchronous game-playing procedure leads to easily computable and effective controls for players who influence the opinions of agents connected by a weighted directed graph.

- *Corrected*: This article has shown that an OSAOC approach with a sequential, parallel, or asynchronous game-playing procedure leads to easily computable and effective controls for players who influence the opinions of *disjoint sets of* agents connected by a weighted directed graph.

Theorem 1: Page 4, in the beginning

- *Original*: If $\mathbf{A}_{cl}^J$ has spectral radius, $\rho(\mathbf{A}_{cl}^J)$, strictly less than one, then the dGc dynamics ...
- *Corrected*: If $\mathbf{A}_{cl}^J$ has spectral radius, $\rho(\mathbf{A}_{cl}^J)$, strictly less than one, *and the players influence disjoint sets of nodes*, (*i.e.,* $\mathbf{b}_i^T \mathbf{b}_j = 0, i \neq j$), then the dGc dynamics ...

The same correction applies to *Theorems 2* and *3*.

Again, it is important to highlight that all results and conclusions were made using this hypothesis, inadvertently omitted in the original submission.

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REFERENCE

[1] G. Gentil and A. Bhaya, "Opinion dynamic games under one step ahead optimal control," *IEEE Trans. Comput. Social Syst.*, early access, Mar. 7, 2024, doi: 10.1109/TCSS.2024.3364611.