

## Editorial Foreword to the Special Issue "In Honor of Professor Serge Galam for His 70th Birthday and Forty Years of Sociophysics"

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I am deeply moved and honored by this Special Issue of the journal *Physics* celebrating my seventieth birthday and forty years of sociophysics [1]. Retrospectively, such an issue seems amazing, especially when recalling that, over forty years ago, in the late seventies, the founding paper coining the word sociophysics [2] and co-signed with Yuval Gefen and Yonathan Shapir, was confiscated by the Chairman of the Physics Department at Tel-Aviv University. Furthermore, almost all academics at that time supported the confiscation, deeming our paper a threat to the Department's reputation [3].

We then brandished academic freedom but, not being tenured, the faculties asserted that we did not have the academic freedom to mention an affiliation to the department without the approval of a tenured Professor. Eventually, Alexander Voronel, a newly emigrated Soviet physicist who had suffered censorship there, endorsed our paper. Thanks to him, we got our paper back and submitted it to the *Journal of Mathematical Sociology*, where it underwent about two years of reviewing before being accepted and published in 1982 [2].

Throughout the subsequent decades, I kept fighting on my own to gain acceptance for sociophysics within the worldwide community of physicists, first in the US, and then in France [4–6]. That was a significant challenge, and I only managed to convince a very few of them, which was already an accomplishment. I believe that most physicists currently engaged in sociophysics are unaware of, and even unable to, figure out the scale of the rejection sociophysics faced in the 1980s.

At the same time, I kept developing sociophysics, supporting its feasibility through the publication of additional papers [7–9], always with long and tedious prior exchanges with referees of the related journals.

Over time, after a long and arduous journey, sociophysics has become an established field of physics, with the papers now published in most of the major physics research journals and physics magazines, as seen with the following non-exhaustive list of journals, given in alphabetical order: *Chaos, Solitons and Fractals* [10], *Entropy* [11], *European Physical Journal Plus* [12], *European Physics Letters* [13], *Frontiers in Physics* [14], *International Journal of Modern Physics* [15], *Journal of Statistical Mechanics* [16], *Journal of Statistical Physics* [17], *Review of Modern Physics* [18], *Scientific Reports* [19], *Physica A* [20], *Physics Letters A* [21], *Physics Reports* [22], *Physical Review E* [23], *Physical Review Letters* [24], *Physics Today* [25], *Physics World* [26], and *PLoS One* [27]. In addition, arXiv [28] has a section titled "Popular Physics, Physics and Society", which is devoted, in good part, to sociophysics preprints.

With this Special Issue dedicated to sociophysics, the newly born journal *Physics* is joining the trend, thus enriching the numerous recent Special Issues on the topic [29–33]. In this respect, I express my gratitude to the five Guest Editors, Soumyajyoti Biswas from India, Taksu Cheon from Japan, Bastien Chopard from Switzerland, André Martins from Brazil and Xijin Tang from China.

The Special Issue is now completed, featuring a total of 17 papers published and available online in open access. This is a significant achievement and I warmly thank all the authors who contributed, making this a truly special issue. I also thank the authors whose submissions were not accepted by the journal.



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**Copyright:** © 2024 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). In this regard, the richness and diversity of this Special Issue demonstrates that, after forty or so years, sociophysics has gone a tremendous way towards becoming solid and promising. I believe that we, as a community of researchers, will succeed in discovering the basic laws governing the social interactions among humans, thus turning sociophysics into an established hard science to tackle social and political phenomena.

That goal is also desirable given the many social and political issues that today societies are currently facing, with seemingly no solution at hand, amidst multiple growing and threatening polarizations.

Given the current level of research associated with in sociophysics, my optimism is sound. Yet, to build a tool that could intervene, as an active key in changing the fate of a society, is both exciting and scary. However, that is inherent to all fields of knowledge and related discoveries. The ethical responsibility of applying sociophysics to real social community will lie among the future users, policy makers and others. For us, the makers of sociophysics, one safety measure to prevent its misuse could be to ensure that the results of our respective works are freely accessible to all.

The next decade should tell us to what extent these hopes, expectations and fears were justified. See you then!

Conflicts of Interest: The author declares no conflicts of interest.

## References

- Martins, A.; Cheon, T.; Tang, X.; Chopard, B.; Biswas, S. (Eds.) Special Issue: In Honor of Professor Serge Galam for His 70th Birthday and Forty Years of Sociophysics. Physics 2023–2024. Available online: https://www.mdpi.com/si/153410 (accessed on 25 April 2024).
- Galam, S.; Gefen, Y.; Shapir, Y. Sociophysics: A mean behavior model for the process of strike. J. Math. Sociol. 1982, 9, 1–13. [CrossRef]
- 3. Galam, S. Sociophysics: A personal testimony. Phys. A Stat. Mech. Appl. 2004, 336, 49–55. [CrossRef]
- 4. Galam, S. Physicists as a revolutionary catalyst. *Fundam. Scientiae* **1980**, *1*, 351–353.
- 5. Galam, S.; Pfeuty, P. Physicists are "frustrated"? Phys. Today 1982, 35, 89–91. [CrossRef]
- 6. Galam, S. Physicists, non physical topics, and interdisciplinarity. Front. Phys. 2022, 10, 986782. [CrossRef]
- Galam, S. Majority rule, hierarchical structures, and democratic totalitarianism: A statistical approach. J. Math. Psychol. 1986, 30, 426–434. [CrossRef]
- 8. Galam, S. Social paradoxes of majority rule voting and renormalization group. J. Stat. Phys. 1990, 61, 943–951. [CrossRef]
- 9. Galam, S.; Moscovici, S. Towards a theory of collective phenomena: Consensus and attitude changes in groups. *Eur. J. Soc. Psychol.* **1991**, 21, 49–74. [CrossRef]
- Oliveira, I.V.G.; Wang, C.; Dong, G.; Du, R.; Fiore, C.E.; Vilela, A.L.M.; Stanley, H.E. Entropy production on cooperative opinion dynamics. *Chaos Solitons Fractals* 2024, 181, 114694. [CrossRef]
- 11. Weron, T.; Nyczka, P.; Szwabiński, J. Composition of the influence group in the *q*-voter model and its impact on the dynamics of opinions. *Entropy* **2024**, *26*, 132. [CrossRef]
- 12. Noorazar, H. Recent advances in opinion propagation dynamics: A 2020 survey. Eur. Phys. J. Plus 2020, 135, 521. [CrossRef]
- 13. Shen, C.; Guo, H.; Hu, S.; Shi, L.; Wang, Z.; Tanimoto, J. How Committed individuals shape social dynamics: A survey on coordination games and social dilemma games. *Eur. Phys. Lett.* **2023**, 144, 11002. [CrossRef]
- 14. Galam, S.; Cheon, T. Tipping points in opinion dynamics: A universal formula in five dimensions. *Front. Phys.* **2020**, *8*, 446. [CrossRef]
- 15. Crokidakis, N. Radicalization phenomena: Phase transitions, extinction processes and control of violent activities. *Inter. J. Mod. Phys. C* 2023, *34*, 2350100. [CrossRef]
- 16. Javarone, M.A.; Singh, S.P. Strategy revision phase with payoff threshold in the public goods game. *J. Stat. Mech.* **2024**, 023404. [CrossRef]
- 17. Gärtner, B.; Zehmakan, A.N. Threshold behavior of democratic opinion dynamics. J. Stat. Phys. 2020, 178, 1442–1466. [CrossRef]
- 18. Castellano, C.; Fortunato, S.; Loreto, V. Statistical physics of social dynamics. *Rev. Mod. Phys.* **2009**, *81*, 591–646. [CrossRef]
- 19. Carro, A.; Toral, R.; Miguel, M.S. The noisy voter model on complex networks. Sci. Rep. 2016, 6, 24775. [CrossRef] [PubMed]
- 20. Cui, P.-B. Exploring the foundation of social diversity and coherence with a novel attraction-repulsion model framework. *Phys. A Stat. Mech. Appl.* **2023**, *618*, 128714. [CrossRef]
- 21. Cheon, T.; Morimoto, J. Balancer effects in opinion dynamics. Phys. Lett. A 2016, 380, 429–434. [CrossRef]
- 22. Jusup, M.; Holme, P.; Kanazawa, K.; Takayasu, M.; Romić, I.; Wang, Z.; Geček, S.; Lipić, T.; Podobnik, B.; Wang, L.; et al. Social physics. *Phys. Rep.* 2022, 948, 1–148.
- 23. Pal, R.; Kumar, A.; Santhanam, M.S. Depolarization of opinions on social networks through random nudges. *Phys. Rev. E* 2023, 108, 034307. [CrossRef] [PubMed]

- 24. Baumann, F.; Lorenz-Spreen, P.; Sokolov, I.M.; Starnini, M. Modeling echo chambers and polarization dynamics in social networks. *Phys. Rev. Lett.* **2020**, *124*, 048301. [CrossRef] [PubMed]
- 25. Schweitzer, F. Sociophysics. Phys. Today 2018, 71, 40–47. [CrossRef]
- 26. Brazil, R. The physics of public opinion. Phys. World 2020, 33, 24–28. [CrossRef]
- 27. Vilone, D.; Polizzi, E. Modeling opinion misperception and the emergence of silence in online social system. *PLoS ONE* **2024**, *19*, e0296075. [CrossRef]
- arXiv. Physics: Physics and Society. Cornel Tech. Cornell University: New York, NY, USA. Available online: https://arxiv.org/ list/physics.soc-ph/recent (accessed on 25 April 2024).
- 29. De Sousa Lima, F.W. (Ed.) *Special Issue: Entropy-Based Applications in Sociophysics. Entropy* **2023–2024**. Available online: https://www.mdpi.com/journal/entropy/special\_issues/entropy\_sociophys (accessed on 25 April 2024).
- Vazquez, F. (Ed.) Special Issue: Statistical Physics of Opinion Formation and Social Phenomena. Entropy 2022–2023. Available online: https://www.mdpi.com/journal/entropy/special\_issues/Opin\_Form\_Soc\_Phenom (accessed on 25 April 2024).
- 31. Diep, H.T. (Ed.) *Special Issue: Computational and Statistical Physics Approaches for Complex Systems and Social. Entropy* **2019–2020**. Available online: <a href="https://www.mdpi.com/journal/entropy/special\_issues/Statis\_Social">https://www.mdpi.com/journal/entropy/special\_issues/Statis\_Social</a> (accessed on 25 April 2024).
- 32. Malarz, K.; Sznajd-Weron, K. (Eds.) *Special Issue: Modern Trends in Sociophysics. Entropy* **2022–2023**. Available online: https://www.mdpi.com/journal/entropy/special\_issues/Trends\_Sociophysics (accessed on 24 May 2024).
- Barra, A.; Agliari, E.; Javarone, M.A. (Eds.) Research Topic: Social Spreading: Opinions, Behaviours and Strategies. Front. Phys. 2020. Available online: https://www.frontiersin.org/research-topics/11146/social-spreading-opinions-behaviours-and-strategies (accessed on 25 April 2024).

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