Humanities & Social Sciences Communications

https://doi.org/10.1057/s41599-025-05568-3 OPEN

Correction: The interplay of time and space in human behavior: a sociological perspective on the TSCH model

Hongwei Jin, Xiaoming Li, Yao Huang, Chengji Yang, Sandhya Armoogum, Neal Xiong & Wanghao Wu

Correction to: *Humanities and Social Sciences Communications* https://doi.org/10.1057/s41599-024-04274-w, published online 26 December 2024

The following corrections have been made.

In the original article the following erroneous references were included:

1. Feynman, R.P. What Do You Care What Other People Think?: Further Adventuresof aCurious Character. W. W. Norton & Company (1986)
2. Gleick, J Chaos: Making a New Science. Penguin Books (1987)
3. Greene, B The Elegant Universe: Superstrings, Hidden Dimensions, and the Questfor the Ultimate Theory. Vintage Books (1999)
4. Hawking, S A Brief History of Time. Bantam Books (1988)
5. Kaku, M Hyperspace: A Scientific Odyssey Through Parallel Universes, TimeWarps, and the Tenth Dimension. Oxford University Press (1994)
6. Penrose, R The Road to Reality: A Complete Guide to the Laws of the Universe.Vintage Books (2004)
7. Sagan, C Contact. Simon & Schuster (1985)
8. Thorne, K.S. Black Holes and Time Warps: Einstein's Outrageous Legacy. W. W. Norton & Company (1994)
9. Tipler, F.J. The Physics of Immortality: Modern Cosmology, God and the Resurrection of the Dead. Doubleday (1994)
10. Witten E (1995) String theory dynamics in various dimensions. Nucl. Phys. B443:85–126
11. Rovelli, C, Vidotto, F Covariant Loop Quantum Gravity. Cambridge UniversityPress, Cambridge (2024)

These have now been replaced with these references:

1. James T. Thorson (2019) Guidance for decisions using the Vector Autoregressive Spatio-Temporal(VAST)package in stock, ecosystem, habitat and climate assessments, Fisheries Research. 210:143-161.
2. Roetzer, A, et al. (2013) Whole Genome Sequencing versus Traditional Genotyping for Investigation of a Mycobacterium tuberculosis Outbreak: A Longitudinal Molecular Epidemiological Study, PLoS Medicine,10(2)e1001387. https://doi.org/10.1371/journal.
3. Li, Yurui, et al. (2015) Spatiotemporal pattern of China's rural development: A rurality index perspective, Journal of Rural Studies. 38:12-26. https://doi.org/10.1016/j.jrurstud.2015.01.
4. Yi, peng, et al. (2020) Multi-Temporal Ultra Dense Memory Network for Video Super-Resolution, IEEE Transactions on Circuits and Systems for Video Technology. 30:2503-2516. https://ieeexplore.ieee.org/document/8752034/.
5. Schläpfer M (2021) The universal visitation law of human mobility, Nature. 593:522-527. https://www.nature.com/articles/s41586-021-03480-9/.
6. Alessandretti, Laura, et al. (2020) The Scales of Human Mobility, Nature. 587:402-407. https://www.nature.com/articles/s41586-020-2909-1/.
7. H. Sun, Z. Zhao, Z. Yin, and Z. He (2022) Reciprocal twin networks for pedestrian motion learning and future path prediction, IEEE Trans. Circuits Syst. Video Technol. 3(32)1483-1497. https://ieeexplore.ieee.org/document/9416584/.

8. Zamboni, Simone, et al. (2022) Pedestrian trajectory prediction with convolutional neural networks, Pattern Recognition.121:108252. https://doi.org/10.1016/j.patcog.2021.108252/.
9. C. Dogbé (2010) Modelling crowd dynamics by the mean-field limit approach, Mathematical and Computer Modelling. 52: 1506-1520.
10. J.C. Kerber, E.D. de Souza, et al. (2021) Consumer behaviour aspects towards remanufactured electronic products in an emerging economy: Effects on demand and related risks, Resources, Conservation and Recycling.170:105572.
11. Rovelli, C, Vidotto, F Covariant Loop Quantum Gravity. Cambridge UniversityPress, Cambridge (2014)

In the original article, the following was included in the legend of Fig. 7b:

Fig. 7 Probability distribution statistics of the spatiotemporal eigenvalues of the travel behavior of pedestrian groups. a, Probability distribution of the *B* and *M* values of pedestrian groups. b, Probability distribution statistics of the R_g values of pedestrian groups. the horizontal coordinates represent the eigenvalues, and the vertical coordinates represent the probabilities.

This has now been corrected to read:

Fig. 7 The probability distribution of the spatiotemporal characteristics of the travel behavior of pedestrian groups. (a) The probability distribution of the *B* and *M* values of pedestrian groups. The horizontal axis represents the magnitude of the *B* and *M* values (b) The probability distribution of the R_g values of pedestrian groups. The horizontal axis represents the magnitude of the R_g values in meters. The vertical axis represents the probabilities.

In the original article, the following was included in Fig. 8a:

"Figure 8(a) shows the visualization visualization visualization of regional spatial attractiveness in Zhejiang Province."

This has now been corrected to read:

Figure 8a shows the visualization of regional spatial attractiveness in Zhejiang Province.

Published online: 17 September 2025