Preface

Science is a highly specialized enterprise—one that enables areas of enquiry to be minutely pursued, establishes working paradigms and normative standards, and supports rigor in experimental research. All too often, however, "problems" are encountered that fall outside the scope of any single discipline, and to progress, new perspectives are needed to expand conceptualization, increase understanding, and define trajectories for research to pursue.

The Ernst Strüngmann Forum was established in 2006 to address such topics. Founded on the tenets of scientific independence and the inquisitive nature of the human mind, we provide a platform for experts to scrutinize topics that require input from multiple areas of expertise. Our gatherings, or Forums, take the form of intellectual retreats: disciplinary idiosyncrasies are put aside, existing perspectives are questioned. Importantly, consensus is not necessarily the goal. Instead, participants work to expose gaps in current knowledge and ways to fill these gaps are collectively sought. To ensure access to emerging insights, the results of the entire process are disseminated through the Strüngmann Forum Report series.

This volume reports on the discussions surrounding the topic of "digital ethology" (i.e., the study of human behavior revealed through multifaceted digital footprints). Tomáš Paus (Professor of Psychiatry and Neuroscience, University of Montreal) brought this topic to our attention in 2019. Having participated in two earlier forums, Paus was keen to explore how digital ethology might be used as a conceptual framework and tool to quantify the social environment, and what novel insights into the social dynamics of populations might emerge to generate new knowledge about human behavior across various communities. He invited Hye-Chung Kum (Professor of Health Policy and Management, and Computer Science & Engineering, at Texas A&M University) to join him in preparing a proposal. After review and approval by our scientific advisory board, the Program Advisory Committee was formed to transform the proposal into a framework that would support an extended, multidisciplinary discussion. Joining us on the committee were Kimmo Kaski (Dept. of Computer Science, Aalto University) and Maria Melchior (Sorbonne Université, INSERM, Institut Pierre Louis d'Epidémiologie et de Santé Publique). Together, the committee identified participants and formulated the following overarching goals to guide the discussion:

- To expand understanding of how the environment shapes human development across the life span
- To examine ways through which digital data can broaden research into human behavior and support future comparative behavioral studies across species

- To construct a conceptual and methodological framework for integrating various data sources

Further, the committee established four primary areas around which work would focus and invited "background papers" key topics to initiate the discussion. Originally scheduled to take place from September 20–25, 2020, the Forum experienced delays due to travel restrictions associated with COVID. Ultimately, people traveled to Frankfurt from July 24–29, 2022, for the Forum and a lively discussion ensued between experts from geospatial and data science, behavioral and brain science, epidemiology and public health, ethics, and law, as well as urban planning. This volume synthesizes the ideas and perspectives that emerged.

An endeavor of this kind, especially one developed during COVID lockdowns, creates unique group dynamics and puts demands on everyone. I wish to thank each person who participated in the Forum for their time, efforts, and positive attitudes. A special word of thanks goes to the members of the Program Advisory Committee as well as to the authors and reviewers of the background papers. Importantly, the work of the discussion groups' moderators—Kim A. Bard, Beate Ritz, Jason Gilliland, and Kimmo Kaski—and rapporteurs—Guillaume Dumas, Gina S. Lovasi, Michele C. Weigle, and Claudia Bauzer Medeiros—deserves special recognition: To support lively debate and transform this into a coherent, multiauthor report is never a simple matter. Finally, I extend my sincere appreciation to the scientific chairs, Tomáš Paus and Hye-Chung Kum. Their expertise and leadership accompanied the entire project and contributed greatly to its outcome.

The Ernst Strüngmann Forum is able to conduct its work in the service of science and society due to the generous backing of the Ernst Strüngmann Foundation, established by Dr. Andreas and Dr. Thomas Strüngmann in honor of their father. I also wish to acknowledge the support received from our Scientific Advisory Board as well as the Deutsche Forschungsgemeinschaft, which provided supplemental financial support.

In the attempt to extend the boundaries of knowledge, it is never easy to relinquish long-held views or ideas. Yet once such limitations are recognized, the act of formulating strategies to get past this point becomes a most invigorating activity. On behalf of everyone involved, I hope this volume is able to transfer some of this excitement and be used to create a greater understanding of the relationships between human behavior and the environment through their digital footprints.

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Digital Ethology

Human Behavior in Geospatial Context

Edited by: Tomáš Paus, Hye-Chung Kum

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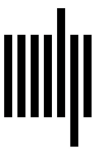

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