Digital ethology: human behavior in geospatial context

What is digital ethology, and should it interest information science professionals and researchers? I will begin my presentation of the book by answering these two questions.

Wikipedia defines ethology (https://en.wikipedia.org/wiki/Ethology) as a branch of zoology that studies the behaviour of non-human animals. The term "digital ethology" appears to be quite new, though the phenomenon it studies has existed for some time. The initiators of this volume and the preceding project define digital ethology as "the study of human behavior revealed through multifaceted digital footprints" (p. ix). This approach equates human beings with the rest of the animal kingdom, which is a fair perspective.

The editors prepared a proposal to the Ernst Strüngmann Forum. This forum is interested in problems requiring multidisciplinary approaches, so its Board has approved the project. As a result, a diverse group of researchers from psychology, health sciences, psychiatry, computer science, environmental studies, geoinformatics, sociology, behavioral sciences, law, and other fields from the US, Canada, Australia, and several European countries convened in Frankfurt am Main, Germany, in July 2022. The outcome of their meetings is this volume of 12 chapters.

Digital ethology focuses on an ethological approach: observing human behavior without influencing the individual, and inferring behavior from existing data sources—specifically, digital footprints of human actions in the digital environment, including contextual information. Although no information science representatives are among the authors, the topics of almost all chapters relate to information, knowledge, data, and human behavior in context, making them highly relevant to information science, albeit approached through different methodologies.

The book's largest section, comprising five chapters, explores the bidirectional relationship between individuals and the environments they create. It examines how these human environments are reflected in digital data sources and identifies potential problems arising from gaps between physical environments and their digital representations. Digital ethology methods expand digital environment measurements and help bridge individual and population-wide data, though data integration, analysis, and interpretation remain complex processes.

The second part focuses on connecting digital data to physical spaces—countries, regions, urban environments—and the digital traces of human activities within these geo-spaces. Data inputs come from various sources, including sensors, geospatial IT systems, human mobility, and social interaction data.

The subsequent sections address methodological challenges in observing human behavior through digital data. These include analyzing digital video data, aggregating geolocation-specific social media data for public health purposes, combining individual medical records with aggregate data from heterogeneous sources, and building complex datasets from human digital activity traces for medical and health safety studies. Despite their potential utility, these studies encounter significant barriers in data processing, compatibility, transparency, and ethical use.

The volume maintains a clear positivistic approach, consistent with the research group's origins and objectives. Written in an academic and serious style, it offers intriguing and often unexpected

perspectives on information, data, and knowledge in human behavior studies. The research approaches and methods, developed and assessed by professional and dedicated researchers, were notably tested during the COVID-19 lockdown.

Ultimately, this book would be invaluable for data scientists and researchers interested in digital research, particularly in exploring the digital footprints left by humans.

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