AI and digital twins will start to inform social policy in 2024

Daiki Masumoto, Fellow, SVP & Head of Converging Technologies Laboratory, Fujitsu Research, Fujitsu Limited

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Somewhat unobserved in the mainstream media, there is a convergence taking place between social science models and technology's ability to analyze and predict human behavior.
The field — which we call Converging Technologies — is advancing rapidly. So much so that in 2024, Fujitsu predicts that we will gain unprecedented insights, leading to AI-informed social modeling.

For example, 2024 will see societal challenges, such as net zero and circularity, being addressed by AI-enhanced digital twins. These issues will be transformed through hyper-customization fueled by predictive behavioral models based on observation data about real people rather than potentially biased theoretical models.

Behavioral prediction
The idea of convergence across these two areas is not new. In 2019, an article in [Cleverism](#) argued that society and culture create science, and science affects society in return. And a [2021 academic paper](#) discussed the intersection between AI and social theory. At that time, it highlighted the uneven availability of data for different areas of social life and theories. However, that gap is no longer a barrier. AI computer image recognition has now advanced to the point where it can recognize and even predict human behaviors.

[Fujitsu Actlyzer](#), for example, is an AI that understands, predicts, and evaluates like a human being. The technology captures human behavior elements directly from camera images, acting as the eyes of the machine. From this, the AI can understand the situation and predict what will happen next. With more privacy in mind, we are also developing a technology that can analyze human behavior without using video footage.
In addition, we are also working on more accurate human modeling technology by utilizing the insights of humanities and social sciences, such as behavioral science and psychology.

Social modelling
Access to large-scale behavioral data and advanced analytics is starting to uncover new insights into collective dynamics, networks, and complex social patterns. These will, in turn, lead to new models that uncover precise mechanisms behind herd behavior, for example, in financial markets, the spread of misinformation, and the adoption of societal norms. Representing these in digital twins for what-if intervention analysis can present the evidence needed for policymaking.
Modeling and computational social science will simulate societies in new detail, enabling refined testing of theories and policies. For example, analyzing city dynamics and residents' needs could inform housing, mobility and recreational planning tailored to localized contexts.
New models of pedagogy could lead to customized, AI-enhanced education — more effective for diverse learning styles.

The age of the digital rehearsal
We're not there yet, but we're not too far away either. Right now, we are starting to see these possibilities play out. Fujitsu announced a new technology named "digital rehearsal" in April to support policy-making and business planning. The first demonstration, in cooperation with shared mobility provider Beryl, is providing realistic simulations of the effects of traffic policies. It reproduces people's use of shared e-scooter services on the Isle of Wight, UK, on a digital twin.

The new technology combines the behavioral economics model "Prospect Theory" and AI to infer the behavior of people in the real world. It reproduces human biases, such as our tendency to overestimate losses and underestimate potential gains, and situational factors that influence behavior, such as weather.

The Isle of Wight digital rehearsal trial tests in advance the effects of people switching from cars to e-scooters. Fujitsu is also estimating how using e-scooters instead of cars affects CO_2 emissions and how far measures — including discounted fees for users who return e-scooters to specific places — will affect the choice of transport. The ultimate aims are to bring business benefits to Beryl, to reduce the damaging environmental and social effects of car use, to inform transport policy, and to positively contribute to the Isle of Wight's wider economy.

Better behavior prediction and social modeling

That's just one example. Expect to see other rapid advances in areas of behavior prediction to improve wellbeing and realize a safe and sustainable society. One of many promising developments underway is in crime prevention.

Field trials are underway in Japan to help people avoid being taken in by phone call fraud by analyzing a possible victim's vital data. The technology estimates if people are being deceived based on fluctuations in feelings of anxiety from vital data, such as their breathing and heart rates.

There are risks in this approach, too. Privacy must be preserved and biases eliminated. However, current social modeling is perhaps even more liable to faulty conclusions due to small data samples and the potential for researcher bias. AI-derived social modeling can improve our predictions about human and social behavior and enhance and streamline the way social services operate.

Daiki Masumoto, Fellow, SVP & Head of Converging Technologies Laboratory, Fujitsu Research, Fujitsu Limited

Daiki Masumoto is a Fellow and the Head of Converging Technologies Laboratory at Fujitsu Research, Fujitsu Limited. He is leading the initiative to create converging technologies which is one of the five key technologies of Fujitsu. He has held prominent leadership roles throughout his career, including Neural Networks, Media Processing, R&D Strategy & Planning, and Applied Research. Along with his roles, he has held various positions including Senior Vice President & CFO at Fujitsu Research of America, Inc. and Corporate Executive Officer at Fujitsu Laboratories Ltd.