



THE PHYSICS OF KNOWLEDGE

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Aurélie Krau, Festive Road

Is social physics a data model that will reshape business and create smart organizations?

Waze is a GPS navigation app that is available in 40 languages to smartphone users and has been a disruptor in the car navigation market. But Waze isn't just a new way to get from A to B, it's an example of a data model known as Social Physics.

Waze is considered "live mapping", where a driver using the app may encounter traffic jams and report it on the app in real time. Each and every member of Waze that is using the App is providing travel data in real time. The app has a close similarity with how a user of the ride hailing app Uber allows customers to see the car they have hailed approach them.

Waze is amongst a range of other data sharing technologies reshaping markets such as fitness travel and even town planning. Cyclists and fitness enthusiasts share routes and performance data on sports app Strava, while public transport travellers in major cities can garner service information on Moovit. Those using these apps are committed to sharing data that will provide insight to other travelers. This commitment to share is central to social physics, a term coined and codified by Alex Pentland, the director of the Human Dynamics Laboratory at the Massachusetts Institute of Technology (MIT). Pentland says of social physics in the book of the same name that "patterns of interaction translate into collective intelligence."

In using the term collective intelligence, Pentland describes data sharing as a central tenet of the modern community and the economy, which will therefore impact how businesses and civic services operate.

"We can no longer think of ourselves as individuals reaching carefully considered decisions. To understand our new world we must extend familiar economic and political ideas to include the effects of millions of people learning from each other and influencing each other's opinions," Pentland writes.

"People don't buy anything without reading reviews and this is the first layer of collective intelligence," says Aurélie Krau, consultant and self confessed tech geek with Festive Road, a consultancy for the travel industry.

"There are more popular hashtags that will inform you of travel information in London faster than the official information sources at Transport for London (TfL)," Krau says of how social physics data is reshaping behavior more effectively than the official operator. Interestingly, TfL has recently announced it is using a tracking system to log passenger movements through 260 WIFI enabled stations. This tracking, something Social Physics creator Pentland has experimented with, uses the unique media access control within every mobile phone.

"We take social cues from each other because we are social creatures who have a tendency to follow the crowd,"

Caroline Carrathurs, Data expert and author

Behavior Based Services

Choosing to follow the directions provided by Waze or Moovit as a traveler is to mimic the behavior also used when being entertained by Netflix, the online streaming service. After some initial data input, Netflix provides the consumer with recommended shows based on customer profiles similar to theirs as well as previous behavior.

“If you look at Netflix, the way that people choose their TV tells Netflix what to make next. We are realizing that the focus has to be on the human and the why,” data expert Carrathurs says of using data to understand behavior.

Data technology consultant Raj Sachdave of Black Box Partnership describes the strategy of Netflix as “social listening... and streaming services are doing it really well.”

Jo Boswell, a customer experience expert and former Head of Customer Value with global airline British Airways (BA) identifies that Waze and Strava provide a reward to the user and this drives social physics, but business travel may struggle to find the same behavioral benefit. “There is a value exchange for those giving up their data, with Strava it is about the competition. People have to see a benefit from sharing data.”

“The social physics approach to getting everyone to cooperate is to use social network incentives rather than individual market incentives,” social physics creator Alex Pentland says.

Underpinning social physics is Big Data, the term often used for major enterprises to collate massive levels of data using the power and affordability of cloud computing.

Pentland says social physics relies on data from call records, credit card transaction information and GPS insights. This data creates “digital breadcrumbs” for social physics and organizations can then “reality mine”, to discover an accurate insight into how communities truly act, rather than how they told a survey or social media they acted. Pentland and experts in social physics believe this data is more accurate because survey and social media data is driven by how the individual wants to be perceived to be behaving.

Carrathurs agrees with Pentland: “Data has to underpin what you are going to do and to have a holistic point of view,” she says.

“Social physics tells you what is really going on,” says Sachdave of Black Box Partnership. Krau at Festive Road also says social physics lends itself to making more informed buying decisions.

Social physics is not dismissive of social media and is in many ways a new data model to provide organizations with a more accurate way of modelling its products or services. “My research shows that both people’s desires and their decisions about how to act are often, and perhaps typically, dominated by the social network effect. Our preferences are mostly based on what our peer community agrees is valuable,” Pentland says.

In an age of polarized views and individualism, social physics reminds us that there is always a counter culture and although data provides an insight into the individual, it also informs organizations of mass behavior and how to tailor and build services.



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About Alex Pentland and his Social Physics

Alex Pentland directs the Human Dynamics Laboratory at MIT as well as leading the Big Data and Personal Data initiatives of the World Economic Forum. In his career he has advised global businesses such as Motorola and Nissan. It is this experience that has shaped his theory of social physics and how important it will be for the future of business travel and society.

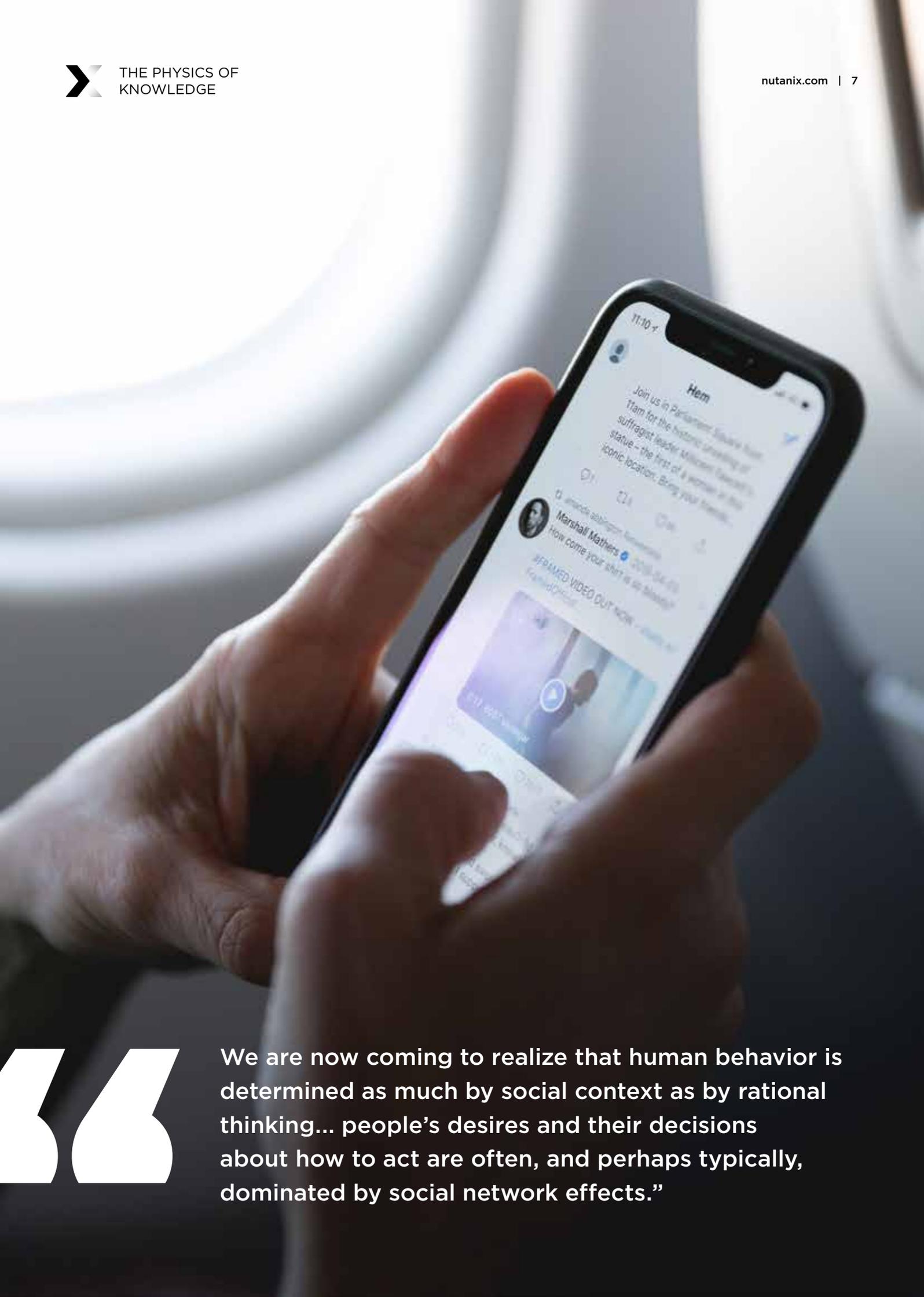
“Big data gives us a chance to view society in all its complexity, through the millions of networks of person-to-person exchanges,” Pentland writes in the book *Social Physics*. His work is not focused on business travel, but is looking at humanity as a whole and how today’s digital society can provide the information businesses, governments and leaders need to manage their perspective environments.

At its heart, social physics has two preoccupations: Idea flow which is discovery and collaboration that creates new ideas and social learning which is the development of a new idea that turns into a habit and new behavior.

“Most of our behavior is shaped by the ideas we are exposed to,” Pentland writes, indicating that digital and data shape modern behavior. “We are now coming to realize that human behavior is determined as much by social context as by rational thinking... people’s desires and their decisions about how to act are often, and perhaps typically, dominated by social network effects.” Pentland’s social network is the wider society, the businesses we work in, and the towns we live in. It’s not Facebook, Twitter or LinkedIn.

“In order to understand the total pattern of interactions within an organization it’s vital to capture all data,” he says.

Pentland’s work is honest, although clearly passionate about his theory, he sees the challenges it creates and addresses the need to ensure that although data sharing is necessary, there will also need to be a “trust-network system that protect personal privacy”.



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