

Big Data: A Gift to the Nutrition Community?

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With the focus of this issue of *Sight and Life* being on technology and entrepreneurship, it is appropriate to give some consideration here to the potential that the phenomenon of Big Data might have for the nutrition community.

This issue carries a fascinating contribution from Robert Alexander Hoekman of 510 Global on the role that Big Data can play in helping address humanitarian crises (p. 57). Big Data and humanitarian assistance are not usually brought together in the same sentence, but Hoekman's article shows what highly practical benefits can be derived from the systematic management of large data sets. It may be that Big Data in fact has much more to offer, and that future approaches to nutrition should look on Big Data not merely as a tool with interesting possibilities but as a strategic enabler.

“Too large and complex”

That Big Data – defined by Merriam-Webster's dictionary as “an accumulation of data that is too large and complex for processing by traditional database management tools” – should be perceived in such a positive light by the nutrition community today may come as a surprise. Ever since the phrase the “information explosion” was first coined (its initial appearance in print dating from 1941, according to the Oxford English Dictionary), people have been at least as frightened as they have been intrigued by the potential of vast data sets. In 1971, for instance, the distinguished American playwright Arthur Miller wrote in *The Assault on Privacy* that: “Too many information handlers seem to measure a man by the number of bits of storage capacity his dossier will occupy.”¹

Big Brother – and his little brothers

Worries about the invasion of privacy and the erosion of basic liberties characterized the discourse on Big Data for many years – long before the term was minted, in fact. Sceptics feared, quite

reasonably, that Big Data would allow Orwellian regimes to extend their “Big Brother” gaze into the most personal recesses of people's lives. Today, of course, we read continually of the increasingly ugly phenomena of cyber bullying and trolling, and of the mental health problems being caused by addiction to social media, especially among the young. “Big Brother” hasn't quite been incarnated in the form imaged in George Orwell's *1984*, but he certainly has some very unpleasant little siblings.

“Mobile health and personalized nutrition would be unthinkable without Big Data”

Despite these very valid concerns, however, the potential benefits of Big Data – a term first used in *The Economist* as recently as 2010² – are finding increasing numbers of advocates, as doctors, scientists, pharmaceutical companies, health insurers, public health professionals and humanitarian agencies alike start to explore the positive potential of combining, analyzing, mining and deploying vast data sets in innovative new ways.

Beyond mHealth

The trend for mHealth (mobile health, as discussed in issue 1/2017 of this magazine)³ and that for personalized nutrition (discussed in the same issue)⁴ would be unthinkable without Big Data. Big Data offers possibilities for reducing animal experiments in the development of new drug treatments, accelerating the launch of new therapeutic interventions, predicting influenza epidemics and food price crises, and delivering medical and public health services and nutrition guidance in many creative and promising new ways. The question is, how are we as a global nutrition community to deploy Big Data so that it will best serve the needs of the world's population, and especially of those vulnerable and disadvantaged sections of society who have the least influence in the matter but the greatest need of disruptive nutrition solutions?

The nutrition community has acquired a new sense of purpose and (relative) cohesion in recent years, with the rise of the SUN (Scaling Up Nutrition) Movement and the prominent role allocated to nutrition in the formulation of the SDGs (Sustainable Development Goals). Can we unite in our approach to Big Data, and harness the possibilities it affords in creative new ways?

Servant or master?

If we are to do this, it seems to me that we will need to go through the steps many other parts of society, from commercial businesses to intelligence agencies, are going through as they struggle to get their arms around this exponentially expanding beast. We will need first to obtain the relevant data – literally, to know where it sits, who owns it, and how to access it. We will need to analyze it in ways that are efficient and relevant to our purposes. We will need to use it in an appropriate manner, and to measure the effectiveness of its use. And, perhaps most challenging of all, we will need to govern it within the nutrition space in such a manner that it remains our servant and does not become our master.

“We need to find ways of governing Big Data within the nutrition space”

Who should be in charge of this undertaking – or, at least, who should lead the charge, for total control of Big Data is a practical impossibility? Computer scientists, program developers and data analysts will of course have a major role to play. So will providers of infrastructure and middleware, as server farms grow in scale and significance and cloud computing offers new ways of managing the continuously expanding data burden. But I like to think that other perspectives will also be required – from

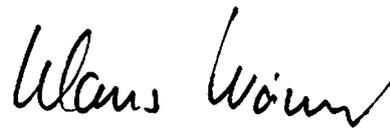
bloggers and vloggers, from field workers and volunteers, and from people who grow, prepare and consume food, as well as from qualified nutritionists, public health professionals, academic institutions, and think tanks.

Data-driven solutions

Used wisely, Big Data has the potential to help address many of the ills which technological progress has visited upon the world. Used injudiciously, it has the potential to wreak havoc on a scale yet unimagined.

I hope that people in the nutrition space who have the vision to approach Big Data in constructive ways will follow the example of Robert Alexander Hoekman and his colleagues at 510 Global. Let us unite to create innovative, data-driven nutrition communication solutions for the benefit of the planet and those who live on it.

With warm regards,



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References

01. Press G. A Very Short History of Big Data. www.forbes.com/sites/gilpress/2013/05/09/a-very-short-history-of-big-data/2/#, Accessed November 22, 2017.
02. Cukier K. “Data, Data Everywhere.” *The Economist*. Special Report. February 25, 2010.
03. Gupta S. Strengthening Community-Based Nutrition Programs with Mobile Technology. *Sight and Life* Vol. 31 (1)/2017.
04. Gibney M. Ever Seen a Fat Fox? Human obesity explored. Book review. *Sight and Life* Vol. 31 (1)/2017.