

THE CRUCIAL ROLE OF DATA TRANSLATORS THROUGHOUT THE NETWORK

The COVID-19 Mobility Data Network (CMDN) connected 150+ researchers and practitioners from all over the world to work with mobility data to better understand social distancing measures at local, regional, and national levels. Data translators proved to be one of the most important roles within the Network. Neither a formal title nor a predefined team role, many researchers and practitioners assumed the role of data translator, recognizing that it played a crucial role in making this new data valuable for COVID-19 response activities.

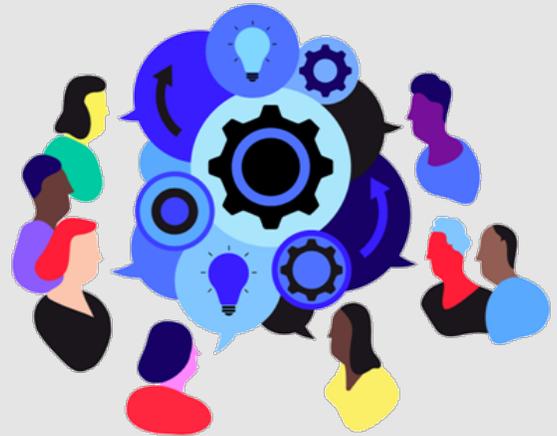


Image: "From big data to humanitarian-in-the-loop algorithms" UNHCR Innovation Service

Data translators are individuals who interact with both data and people, via various communication channels. It can be narrowly defined as someone who explains what data exists on a spreadsheet, the data analysis method, or even describing the results of analyses on an online dashboard. More broadly, data translators can also be individuals with skills in helping people and teams understand how best to align the data of interest to their specific priorities and evolving purpose. In sum, they act as a bridge between data, people, purpose, and action over a wide range of activities. They often emerge from multidisciplinary teams who are working with data in new environments, or are tackling challenges with new collaborators. The business and technology sectors have begun to understand the importance of these types of team members on analytics teams, although the delineations between the technical and non-technical roles are more exclusive.

"Why are translators so important? They help ensure that organizations achieve real impact from their analytics initiatives."

- Harvard Business Review

"[T]ranslators play a critical role in bridging the technical expertise of data engineers and data scientists with the operational expertise of marketing, supply chain, manufacturing, risk, and other frontline managers. In their role, translators help ensure that the deep insights generated through sophisticated analytics translate into impact at scale in an organization."

- Harvard Business Review

"but data translators are simply everyday employees who have learned to speak the language of data scientists and analysts."

- World Economic Forum

“Humanitarian organizations need hybrid profiles, i.e. data translators who are able to understand and interpret both sides of the discussion.”

- United National Global Pulse

“This is also the case with humanitarian organisations that need to create hybrid profiles, i.e. data translators who can both understand the operational humanitarian contexts and have data intuition. They know what can and cannot be done with data and how to interpret and visualise data and algorithms to provide information for real impact.”

- United Nations High Commissioner for Refugees Innovation Services

Humanitarians who work in similar complex, dynamic, and uncertain settings have also recognized the role of data translators in data driven activities that are intended to positively impact response operations. The experiences and findings from the User Feedback Project highlight similar trends. A data translator was often needed to bring the data to practice successfully. While not yet formally recognized as an essential role, members in the Network recognized its importance.

DATA TRANSLATORS ARE DIFFERENT FROM BROKERS

Data brokers set up a pipeline for data use, and the Facebook Data For Good program acts as a data broker for non-profit and social good organizations to access specific datasets for the Network researchers. During the COVID-19 global pandemic, Facebook aggregated and anonymized movement data and high density settlement layers (i.e., population data) for use by the CMDN. They set up an essential pipeline for using the data, but did not play a primary role in helping the network understand when, how, and under what circumstances to best use the data in response environments all around the world. The Network acted as a connector using trusted relationships to identify collaborators and teams around the world. Members who joined the Network tried to use the data (and many successfully) for operational purposes to help stem COVID-19 outbreaks around the world and transition governments and communities back toward economic stability and recovery.

“There was some skepticism about mobility data, and Nishant was able to translate the data findings”

- Integrated Data Team (IDT), NYC Dept of Health and Mental Hygiene

“And then finally, it's the last piece, I think, perhaps the most important piece is the actual translation of the data ... everyone wants this ambiguous metric of mobility. And I don't think there is a single one there. There are many.”

- Nishant Kishore, Ph.D. Candidate in Population Health Sciences | Epidemiology, Harvard University

A DIVERSITY OF ROLES AND SKILLS

The User Feedback Project identified many data translators through the Network, playing roles within small data teams and at various levels across the network. For example, two core members of CMDN, Andrew Schroeder, Vice President of Research Analytics for Direct Relief, and Nishant Kishore, played a major role in helping introduce, frame, and provide examples of ways to use mobility data for COVID-19 response activities.

Their experience using Facebook data in other disaster and disease outbreak settings, strong communication skills, and big picture views on its potential use in specific contexts helped governments see the potential added value. One-to-one calls with individual teams and city wide calls likely helped government groups take the first steps to engage with the data during a period of information overload and severe time restrictions.

Researchers who worked directly on teams with practitioners found themselves acting as data translators. They introduced new metrics such as percent travel between locations and helped many teams interpret graphs enabling them to better understand the variation in trends between weekdays and weekends. A few also worked closely with practitioners to adapt their questions over time. Practitioners in government organizations also acted as data translators within their own organizations, in particular when there existed a data team positioned to support response managers, mayors, and other leaders within the organization. Teams in Asia, British Columbia, and two city teams in the United States (Syracuse and New York City) had team members who acted as data translators, working more closely with government officials in public health offices.

The team in British Columbia described themselves as both researchers and practitioners, with dual appointments in academic centers and in the provincial public health system providing a sustained environment with which to fulfill this role.

"It's really necessary for at least somebody to have a very deep understanding of what that is [who is generating the mobility data] , and to be able to convey that to these data teams."

- Nishant Kishore, Ph.D. Candidate in Population Health Sciences | Epidemiology, Harvard University

"We are based in a public health agency, but we are also researchers. So we are directly connected with the overall COVID response."

- Naveed Janjua, Executive Director, Data and Analytics Services, British Columbia Center for Disease Control

"[This] is very useful because a lot of your research is driven by what are actual questions from the public health point of view. And then you have the ability to translate these into policy and programming in a much more efficient way."

- Naveed Janjua, Executive Director, Data and Analytics Services, British Columbia Center for Disease Control

“Luckily we had Nishant, listening to what would be useful to us, and trying to translate that into something that was actionable at the scale that we could. But we also had a communication channel that Pablo created on whatsapp where Pablo and Pamela could communicate about the reports, etc., and the Minister of Science would communicate requests for the sitrep, changes in the report, etc.”

- Pamela Martinez, Postdoctoral Research Fellow, Harvard University

“The fact that we could talk to him, and he would build something and then we could talk about it. Was a real key.”

- Integrated Data Team (IDT), NYC Dept of Health and Mental Hygiene)

“Try to place yourself in their shoes.”

- Ayesha, Assistant Professor, Department of Demography, University of California Berkeley

A few practitioners took on roles both as data translators who either worked closely with key decision-makers or were decision-makers in their response organizations. For example, Nathan Fogg, the Emergency Manager for Arapahoe County, Colorado received mobility reports via email each week and not only interpreted the results, but used them in response planning as a manager in the county’s response operations.

An analyst who supported the emergency response activities for the state of Massachusetts brought mobility data analyses and findings to a 4:30pm daily small group planning discussion with the governor, lieutenant governor, and COVID command center senior staff.

COMMUNICATION IS KEY

Data translators embodied strong communication skills, and a commitment to regularly communicating with a focus on targeting ways that met their colleagues' work environments. Analyses of over 40 interviews highlighted the skills of understanding how best to explain the data, conversations about the questions that were most relevant to government agencies, and discussions about data limitations. The iterative and ongoing communications between groups were important, but how teams navigated the unknown together, reanalyzing data, showing it again, and having another conversation to resolve issues, seemed to be most important.

Successful data translators were able to explain not only mobility data, but communicate how the results were meaningful (or not). They were often able to relate the results to the purpose and priorities of the potential key decision-makers. They were frequently able to adapt, willing to iterate, and in particular, manage the uncertainty and fluidity of the social environment.

PREVIOUS COLLABORATIONS PLAY A POSITIVE ROLE

The majority of research data translators took on this role in new collaborative spaces, for which they did not have pre-existing relationships with practitioners and many groups had not responded in a prior pandemic. Data translation is essentially the ability to communicate with one another about meaning, purpose, and data. Finding a way to do that often takes time, particularly in complex, dynamic and time pressured settings. Having a previous working relationship where people have discussed, explored and navigated mobility data together in the past can help prepare teams for the next disasters or outbreak of disease.

DATA TRANSLATORS AND THE ROLE OF QUESTION CO-CREATION

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Coming up with the questions that reflect the intended purpose and priority was also a data translator challenge. Some researchers did not view that as their role and felt the purpose and questions for which to use the data was the work of practitioners. The culture around “present me the problem” or “I need the question” is well established among traditional engineering and technology work environments, where a unidirectional communication exchange is presented as the successful pathway for using data in practice.

Others engaged in learning more about purpose, context, and meaning through social interactions and ongoing communications with one another. They were able to collaboratively identify meaningful questions for which to explore the mobility data, and many found success through this type of engagement.

For example, the collaborations between Pablo Marquet from the Pontificia Universidad Católica de Chile, the Minister of Science in Chile, and Pamela Martinez, a Postdoctoral Research Fellow at the same university, exemplified dynamic and at times even ad hoc communications to identify priority questions and design situation reports that were used at the national ministerial level during the COVID-19 response.

Using Whatsapp, they were able to discuss needs and priorities with one another. Pamela in the researcher role was able to virtually observe the conversations between Pablo and the Minister of Science, observing at times how Pablo as a data translator defined, adapted, and sought additional feedback from the minister about where to go next.

A more iterative, adaptive, and inclusive approach to question and data exploration requires data translators to adopt a more social --and often more time intensive-- engagement. In disaster settings this can be a particularly challenging role switch for traditional researchers. With the Network model, many researchers worked with data teams that already existed within government offices. In these settings the data teams were able to work internally as their own data translators, aligning how to best use the data and matching it with their response activities. How specific practitioners or researchers embodied these characteristics, while others struggled to achieve this, is not clear from the project and requires further study.

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"At least for me it's that it all starts off with the conversation with the people that are going to be using the data. And so we kind of need to be able to speak with them and figure out what local context actually makes sense or doesn't."

*- Nishant Kishore, Ph.D.
Candidate in Population Health Sciences |
Epidemiology, Harvard University*

"This is really hard, we were all scrambling, they didn't know what the important questions were, and we didn't know either. We didn't have time to devote to thinking about it."

- Ayesha Mahmud, Assistant Professor, Department of Demography, University of California Berkeley