

DATA-POP
ALLIANCE



OPAL: Technology and Governance Standards to Leverage Private Data for Human Development

Emmanuel Letouzé, PhD

Director, Data-Pop Alliance | Co-Founder and Program Director, OPAL | Fellow, MIT

UN World Data Forum Webinar series, 30 October 2019



OPAL tackles the Data Revolution's #1 conundrum: sharing and using sensitive data safely, ethically, systematically, at scale



Open algorithms: A new paradigm for using private data for social good By Thomas Roca, Emmanuel Letouzé | 18 July 2016

On the privacy-conscious use of mobile phone data

Yves-Alexandre de Montjoye✉, Sébastien Gambs, Vincent Blondel, Geoffrey Canright, Nicolas de Cordes, Sébastien Deletaille, Kenth Engø-Monsen, Manuel Garcia-Herranz, Jake Kendall, Cameron Kerry, Gautier Krings, Emmanuel Letouzé, Miguel Luengo-Oroz, Nuria Oliver, Luc Rocher, Alex Rutherford, Zbigniew Smoreda, Jessica Steele, Erik Wetter, Alex "Sandy" Pentland & Linus Bengtsson

Scientific Data 5, Article number: 180286 (2018) | [Download Citation](#) ↓

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International journal of science

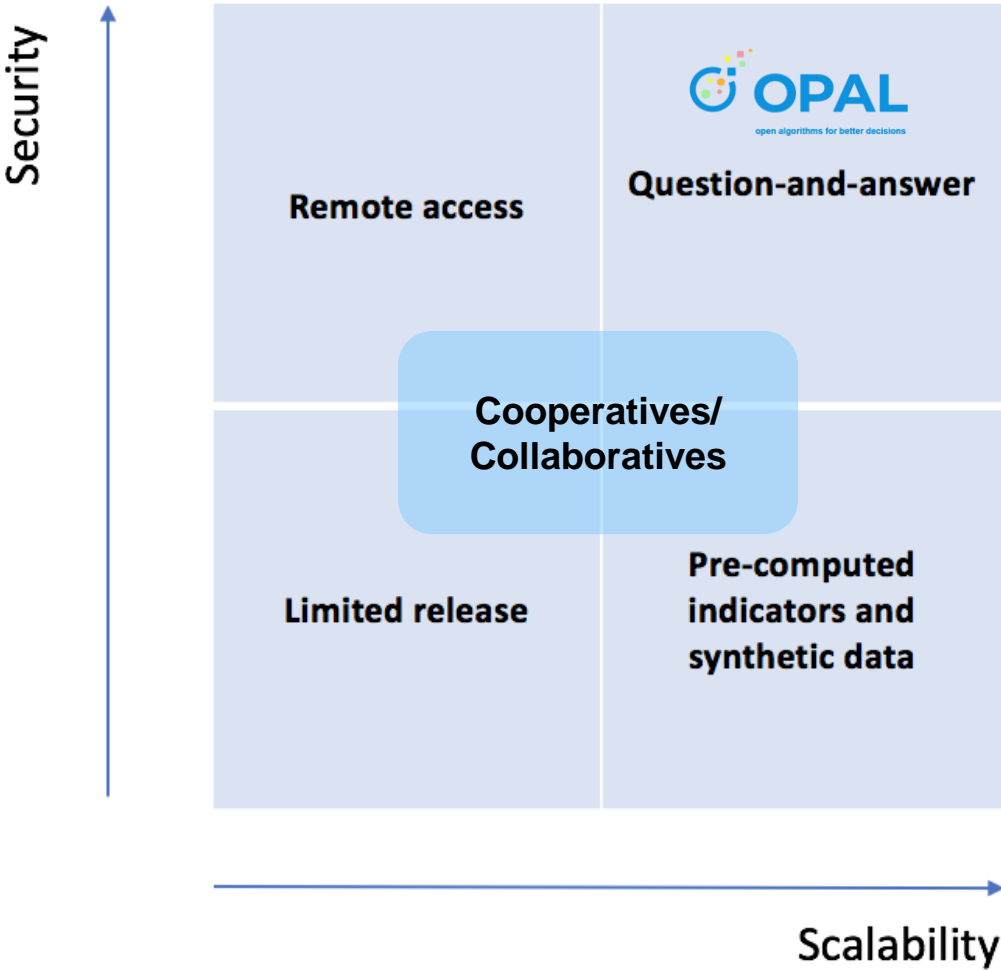
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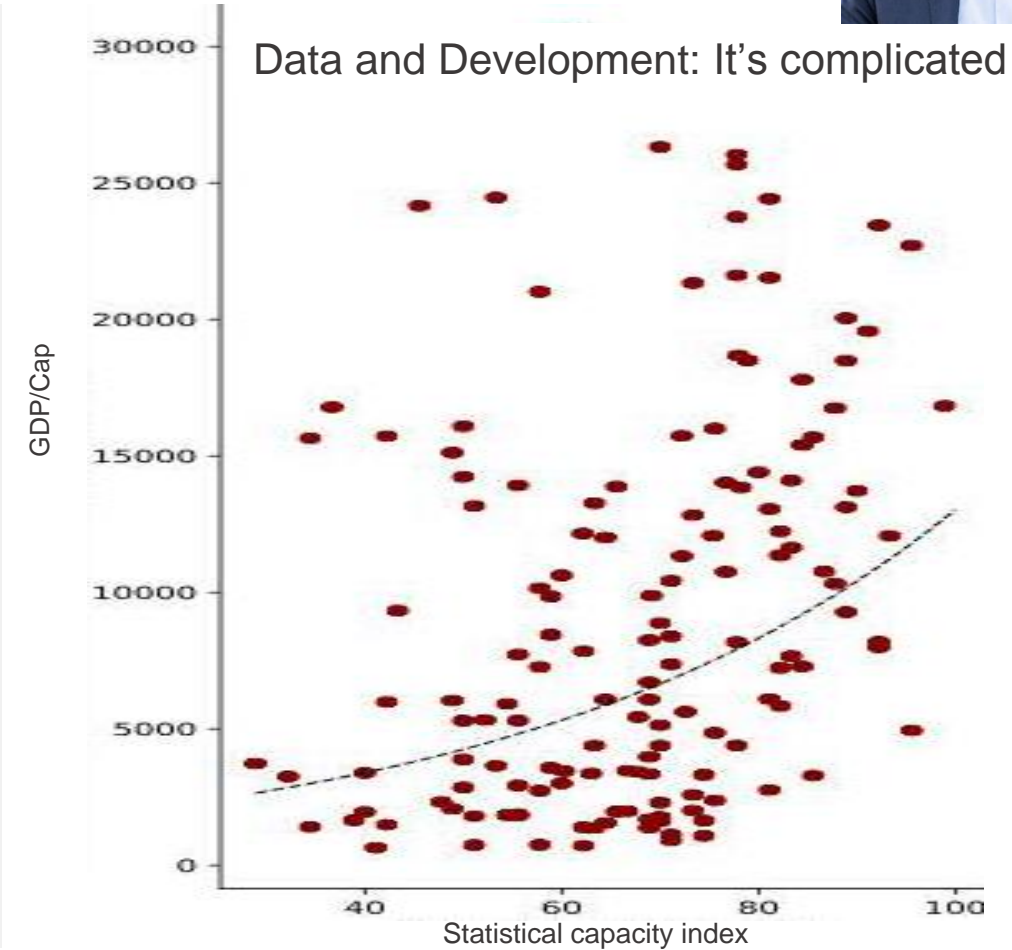
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NEWS FEATURE • 29 MAY 2019

Can tracking people through phone-call data improve lives?



Crucially, the problem(s) OPAL address(es) is not only data gaps, it is also making measurement, stats and facts *matter* more



WHY FACTS DON'T CHANGE OUR MINDS

New discoveries about the human mind show the limitations of reason.

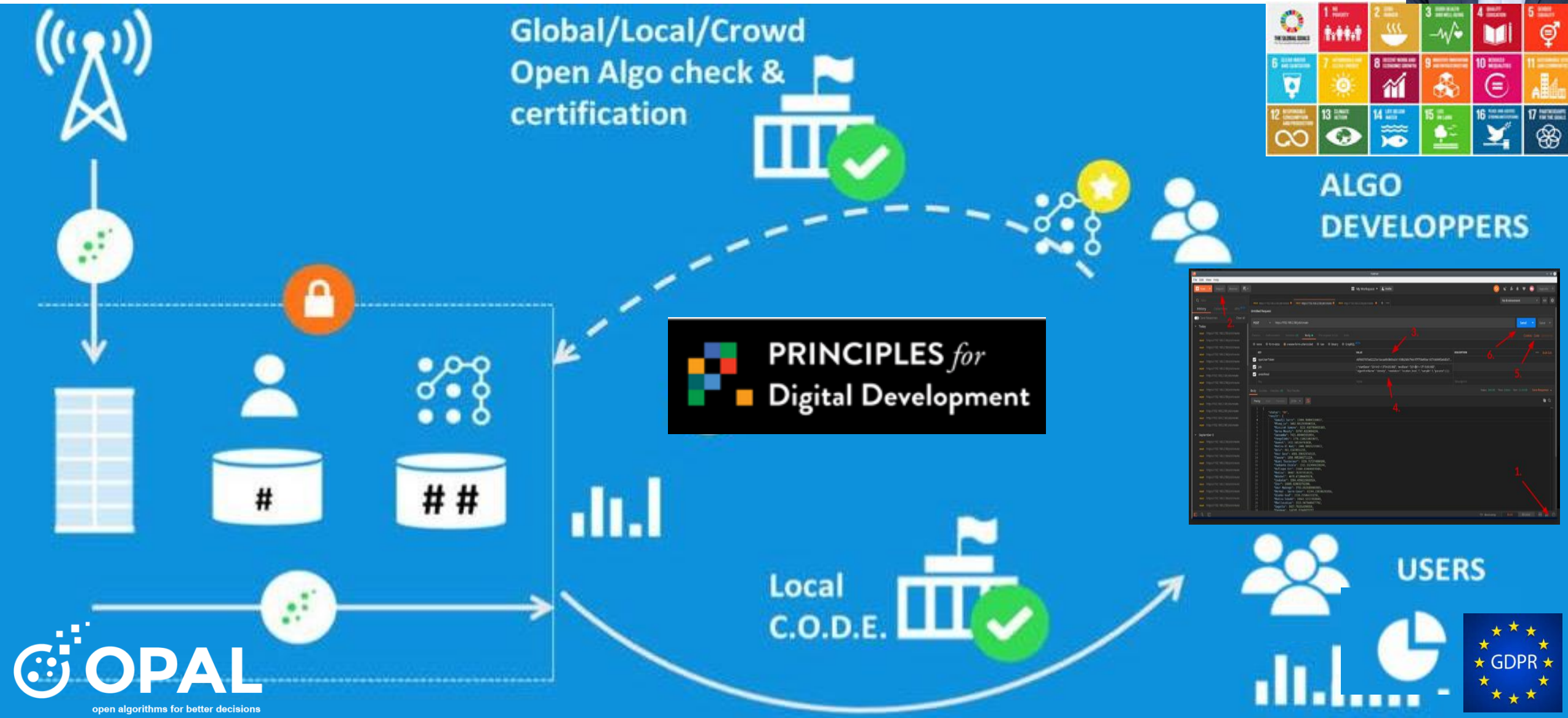


TOWARDS A HUMAN ARTIFICIAL INTELLIGENCE FOR HUMAN DEVELOPMENT

Emmanuel Letouzé¹, Alex Pentland²

¹Data-Pop Alliance, MIT Media Lab, and OPAL, ²MIT and Data-Pop Alliance, and OPAL

OPAL is developing and testing 'Human AI' privacy-preserving and participatory technology and governance standards



After Senegal and Colombia with their NSOs and 2 major telcos, OPAL aims to expand to new users, industries and geographies



TECHNOLOGY



Features

- 1 Fully functional version of the core architecture
- 2 Open code of the platform
- 3 Three algorithms and indicators available
- 4 Use cases

Pilot Phase 2017-2019
Proof of Concept



Features

- 1 Training and open source material
- 2 Fully functioning governance bodies (C.O.D.E.)
- 3 Position paper on ethics and GDPR compliance
- 4 Installation toolkit

GOVERNANCE

+ 1 new pilot

Funding Needs:

- Approximately € 2m for 2 years of operation
- € 300k per new pilot country



Features

- 1 Algorithm diversity (Bank/store)
- 2 Easy monitoring/integration
- 3 Enhanced security
- 4 Friendly usability, SDK
- 5 Representativity and Stratification
- 6 Upgraded capabilities
- 7 Safe answer optimization
- 8 Privacy research

Beta Phase 2020-2021
Proof of Market



Features

- 1 Oversight and steering
- 2 Legal and ethics (C.O.D.E.)
- 3 Facilitating algorithm dev.
- 4 User and developer support
- 5 Knowledge and skills
- 6 Research
- 7 Business model & partner dev.

New potential pilot countries

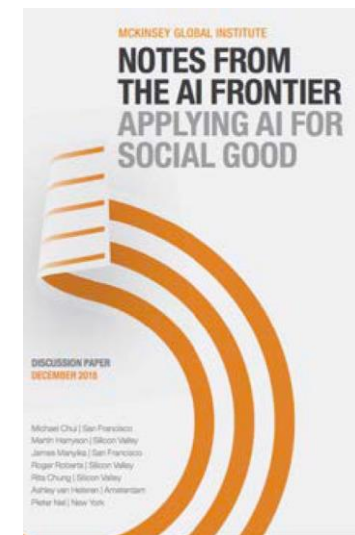


Scaling Phase 2022 and beyond
Scaling and Growth

New potential industries



OPAL becomes an independent legal entity



aggregated insights from a company's data without data leaving the company's server. If proven successful, this could be a powerful tool in unlocking private data for social causes."

—McKinsey Global Institute
"Applying AI for Social Good",
December 2018"

"Other data sharing initiatives with private companies are also being worked on, including OPAL (...), to derive

Key message: We must “industrialize” the Data revolution

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International journal of science

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NEWS FEATURE • 29 MAY 2019

Can tracking people through phone-call data improve lives?

Researchers have analysed anonymized phone records of tens of millions of people in low-income countries. Critics question whether the benefits outweigh the risks.

Amy Maxmen

fight against malaria.” The company is also collaborating with researchers to conduct similar studies in Myanmar and Thailand.

But this type of promotion irks malaria researchers who aren’t convinced that the information is helpful, especially given the lack of resources for proven methods to combat the disease — such as health workers, bed nets, insecticides and malaria drugs. “On an intellectual level, this [mobile-phone research] is attractive,” says Myaing Nyunt, a malaria researcher at Duke University who is based in Myanmar. “But the thing in my head is that actual work is becoming harder to sustain in villages.” Global funding for malaria has plateaued in the past few years, she points out — and with it, progress.

The same practical argument could be made against research on parasite genetics. But Nyunt says that call-record analyses trouble her more, because people haven’t consented to take part.

DATA FOR DEVELOPMENT

In 2012, the mobile-phone company Orange, together with data scientists at the UN and several universities, held a ‘Data for Development’ challenge to encourage researchers to explore positive uses for call-detail records. Phone companies mostly analyse the records to boost their businesses, says Robert Kirkpatrick, director of UN Global Pulse, an initiative to harness big data. “We wanted to show how it could be used for the public good,” he says.

Orange let scientists analyse anonymized call records from customers in Côte d’Ivoire. In one project, researchers found that brief calls surged before small violent events in Côte d’Ivoire, and suggested that future analyses could help officials to predict danger and thus intervene — but that idea hasn’t been taken up.

in the studies. “Is there no way around understanding how isolated refugees are besides using an invasive technique to track people through mobile technology?” asks Alexandrine Pirlot de Corbion, a programme leader at Privacy International in London, a charity that advocates for the right to privacy. Another way to find out whether refugees are isolated would be to ask them questions, which allows them to decide what to share, she adds.

The Turkish computer engineer who helped to organize the refugee challenge, Albert Ali Salah, now at Utrecht University in the Neth-

“NOW IS THE TIME TO PUT IN PLACE STANDARDS TO DO THIS SAFELY, AT SCALE AND ETHICALLY.”

Emmanuel Letouzé

erlands, defends the project’s worth. Anyone who might want to harm any of the 3.6 million Syrian refugees in Turkey already knows their neighbourhoods, he argues. But call-record intelligence might help policymakers by giving them quantitative information about refugee movements. And an ethics committee vetted the results: when research indicated refugees were working at a location illegally, for example, the committee told them not to publish the finding.

Responding to the charge that such data challenges have not helped people, Kirkpatrick says exploration was a necessary first step. The next phase in call-records research, he says, should be cost–benefit analyses that look at the investment needed to conduct a study, roll out an intervention and appraise the advantages for communities.

SECURITY AND CONSENT

In the meantime, exploratory studies continue.

risk off us,” Rivers explains.

Letouzé, de Montjoye and their colleagues are piloting a system called Open Algorithms (OPAL) in Senegal and Colombia. As well as running analyses on phone-company servers, their model includes a committee that vets and shapes researchers’ questions so that the data analysed are less specific. For instance, if aid workers want to know how many people leave Senegal’s capital city Dakar each week, the committee can decide that records should be aggregated by day, rather than by hour. This reduces the number of extra, unapproved questions that the results can answer. “It’s not a perfect system,” de Montjoye says, “but we are trying to find a way to mitigate risks, while making sure data can be used for good.”

Since last year, groups including Flowminder and phone com-

panies that are headquartered in Europe must comply with the European Union’s general data-protection regulation. Although anonymized and aggregated data seem to be exempt, Letouzé thinks that the law signals a trend towards privacy, and suggests that data scientists should consider how they might incorporate consent into their studies. OPAL is planning to send subscribers a text message asking if they want to opt out, which causes Letouzé some concern. “There are studies showing that when you give people an option, you lose about half,” he says. He’d like to change that by convincing people of the worth of their studies, and by giving them assurances about data security.

UNINTENDED CONSEQUENCES

Advocates for data security and human rights say that, although technical changes are welcome, more careful risk assessments are required, because records don’t need to be



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Thank you
Merci
Gracias

www.datapopalliance.org
www.opalproject.org