

How can AI be used for Social Good?

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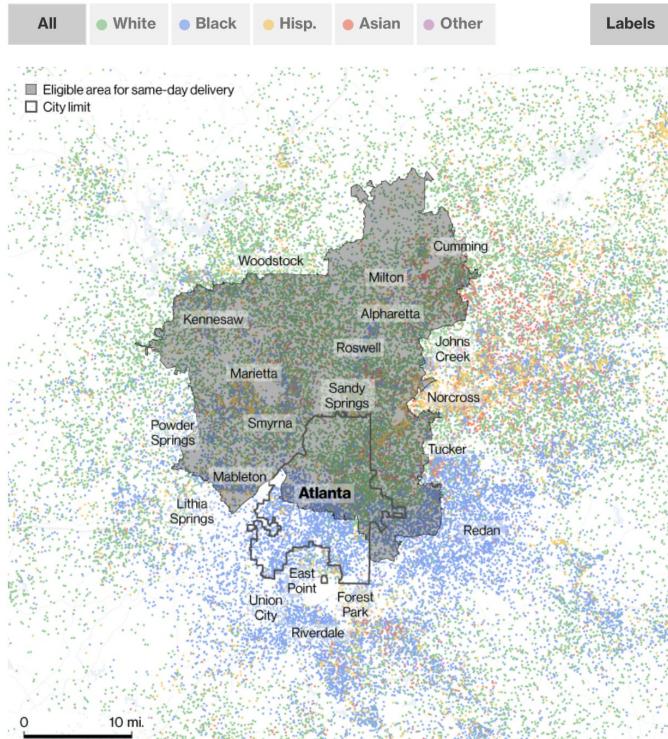
Luke Church

Director of Innovation & Learning, Africa's Voices Foundation; Affiliated Lecturer, Computer Laboratory, Cambridge



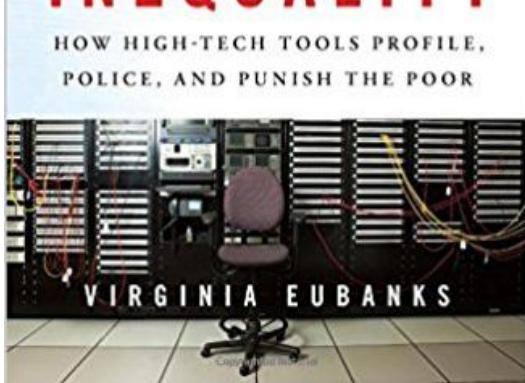
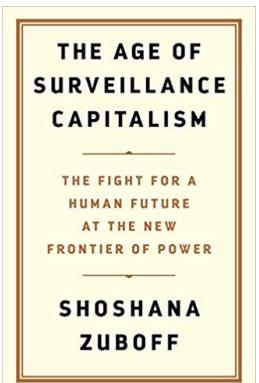
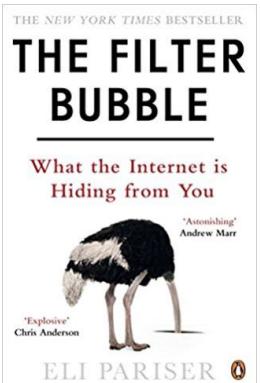
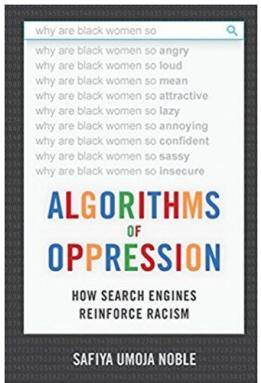
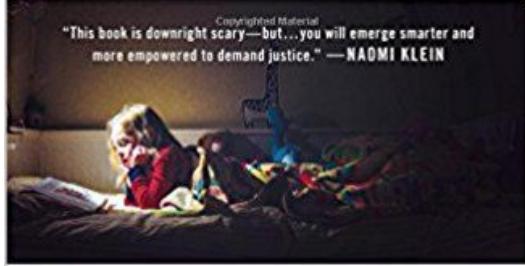
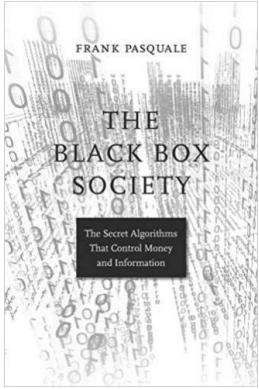
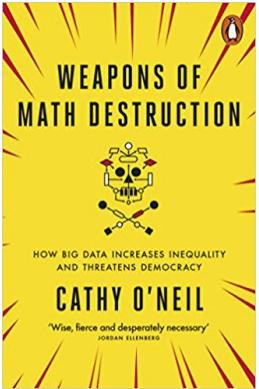
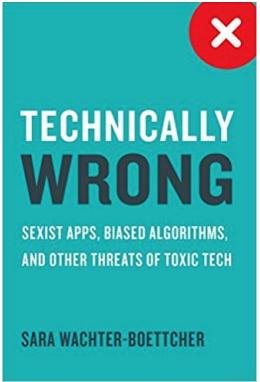
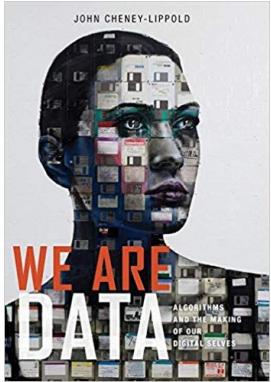
UNIVERSITY OF
CAMBRIDGE

The moral toxicity of the tech industry



Algorithmic selection of where to offer a service

An isolated incident?



2 years later

Amazon's AI hiring tool discrim... +

NOTABLE: Michael Cohen, Leaving Neverland, Guilty Juror, Solange, Luke Perry, Ilhan Omar, Y.A., PODCASTS, SLATE PLUS

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A NOVEL EXCUSE FOR MISSING GYM CLASS

MONEYBOX

Amazon Created a Hiring Tool Using A.I. It Immediately Started Discriminating Against Women.

By JORDAN WEISSMANN OCT 10, 2018 • 4:52 PM

TWEET SHARE COMMENT



Amazon sign, with dude.
David Ryder/Getty Images

Amazon should have anticipated the backlash

Algorithmic selection of whom to offer a job to

Digital anxieties for social scientists

'Everybody' is a data collector

Everybody is an analyst

Everybody is a researcher

Everybody is an expert ... or nobody is ... or

only the Kings of Computation are...

This is a world where massive amounts of data and applied mathematics replace every other tool that might be brought to bear. Out with every theory of human behavior, from linguistics to sociology. Forget taxonomy, ontology, and psychology. Who knows why people do what they do? The point is they do it, and we can track and measure it with unprecedented fidelity. With enough data, the numbers speak for themselves. ... The big target here isn't advertising, though. It's science.

Correlation supersedes causation, and science can advance even without coherent models, unified theories, or really any mechanistic explanation at all.

There's no reason to cling to our old ways. It's time to ask: What can science learn from Google? - Chris Anderson, WIRED, 23.06.2008

The Power of Organizing Without Organizations

HERE COMES EVERYBODY

Revolution doesn't happen when society adopts new technology, it happens when society adopts new behaviors

CLAY SHIRKY



WITH
AN UPDATED
EPILOGUE



"A fascinating survey of the digital age ... An eye-opening paean to possibility." —THE BOSTON GLOBE

A futile or dangerous quest?

“That’s another thing we’ve learned from your Nation,” said Mein Herr, “map-making. But we’ve carried it much further than you. What do you consider the largest map that would be really useful?”

“About six inches to the mile.”

“Only six inches!” exclaimed Mein Herr. “We very soon got to six yards to the mile. Then we tried a hundred yards to the mile. And then came the grandest idea of all! We actually made a map of the country, on the scale of a mile to the mile!”

“Have you used it much?” I enquired.

“It has never been spread out, yet,” said Mein Herr: “the farmers objected: they said it would cover the whole country, and shut out the sunlight! **So we now use the country itself, as its own map, and I assure you it does nearly as well.**

Sylvie & Bruno Concluded: The Man in the Moon (Lewis Carroll)

Critical reflections on Social Science

Our methods are *political*

Our methods are *material*

Our methods are also *self-interested and pragmatic*

To scale social research:

We shift the **interpretive burden** to others: we 'instrument' research subjects, or

We abstract away inescapable role of interpretation: we take data as fact



World Bank, Living Standards Measurement Study

Burden of interpretation?

Critical reflections on Technology & Data

Our methods are *covert politics*

Our methods are *essentialist*

Our methods are *capitalist*

We seek to reduce/'clean' reality into formalisms

We then reify the formalised representation

We 'scale' by outsourcing the labour of formalisation on 'customers', whilst concentrating benefits of aggregation to ourselves

On imprinting errors

“In all this I feel a grave danger, the danger of what might be called **cosmic impiety**. The concept of ‘truth’ as something dependent upon facts largely outside human control has been one of the ways in which philosophy hitherto has inculcated the necessary element of humility.

When this check upon pride is removed, a further step is taken on the road towards a certain kind of madness - the intoxication of power which invaded philosophy with Fichte, and to which modern men, whether philosopher or not are prone. I am persuaded that this intoxication is the greatest danger of our time and that any philosophy which, however unintentionally, contributes to it is **increasing the danger of a vast social disaster**”

A History of Western Philosophy (Bertrand Russell)

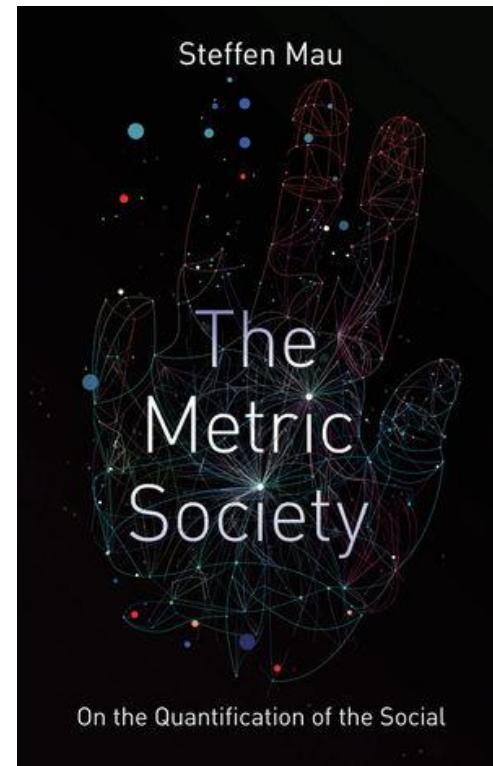
Interdisciplinarity that builds the worst of both worlds

The worst of when we come together:

Relieve the interpretive burden on human subjects through
datafication and surveillance of everyday living

Relieve our interpretive burden by scaling capacity for
correlation through automation and fetishising patterns

Become complicit in how knowledge construction in this way
then shapes resource allocation, power, conditioned behaviour
and new subjectivities

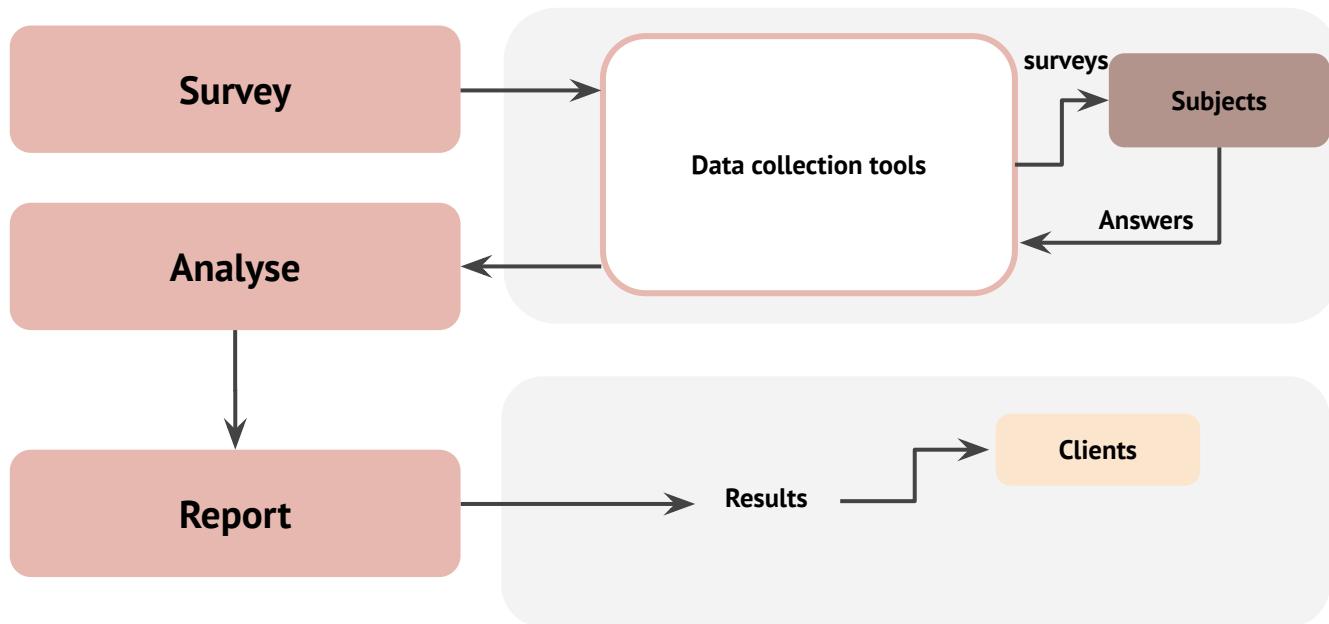




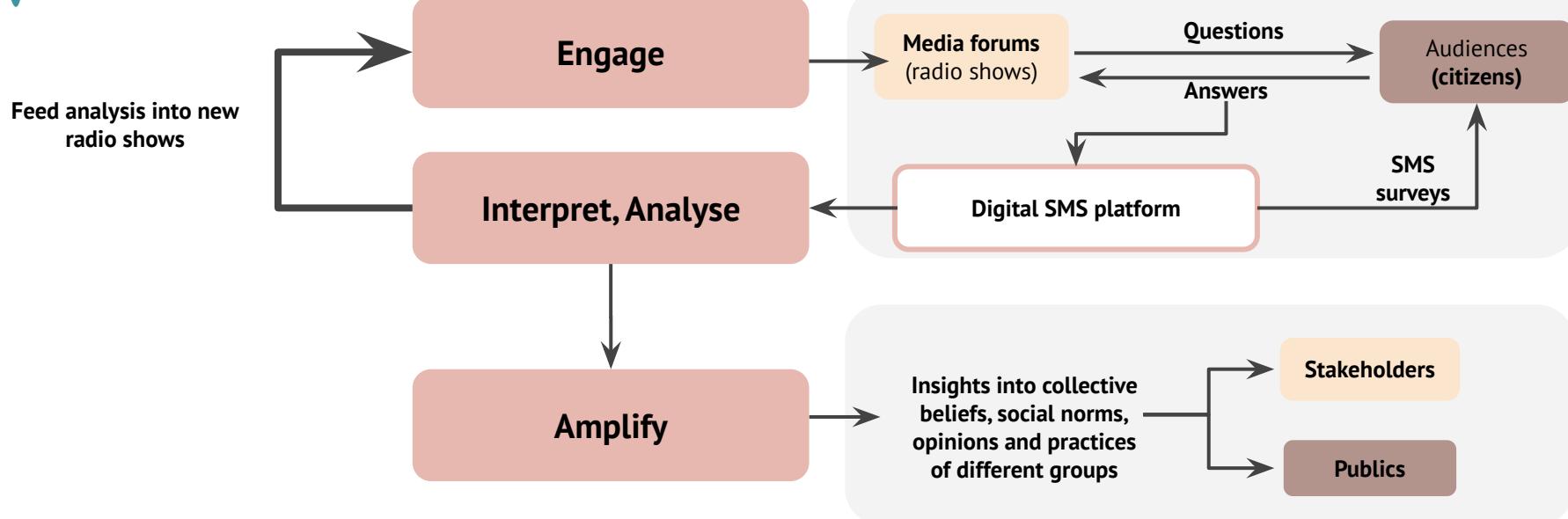
For an agenda to amplify citizen voices towards more effective and accountable decision-making by aid and governance actors, how can we:

- Meaningfully engage on people's own terms, ways they value, rather than extraction?
- Achieve an ethical approach to scaling listening and interpretation?
- Retain authenticity of unique human voices?

AVF: Rethinking an alternative



'Extractive' method



Socio-technical: Scaling listening

An example of AVF's work

A mediated public discussion on displacement and durable solutions in Mogadishu (2018-19)

Common Social Accountability Platform (CSAP)

Vision

A citizen engagement-to-evidence method for strengthening social accountability in Somalia by connecting citizens with authorities in ways that make sense to them, not defined by one programme, mandate or sector.

Aim

To maximise the chances that citizen perspectives are heard in decisions that affect their lives.

How it works

Uses AVF's interactive radio approach to create a sustained channel for engagement and public opinion research, with one format, media brand and infrastructure.



Displacement in Mogadishu

- 1 in 6 Somalis displaced due to ongoing insecurity.
- Over 600,000 IDPs in Mogadishu.
- IDPs are vulnerable, face discrimination, are excluded from decision-making and rely on humanitarian assistance.
- Displacement crisis co-exists with weak governance.
- Lack of effective spaces for dialogue between IDPs and host community undermines social cohesion & durable solutions.



Mogadishu, Somalia

Objective

To build public dialogue in the city on critical displacement topics and to gather public opinion to inform ongoing durable solutions programmes and decision-making.



Key stakeholders: government, aid deliverers, humanitarian donors

Regional government



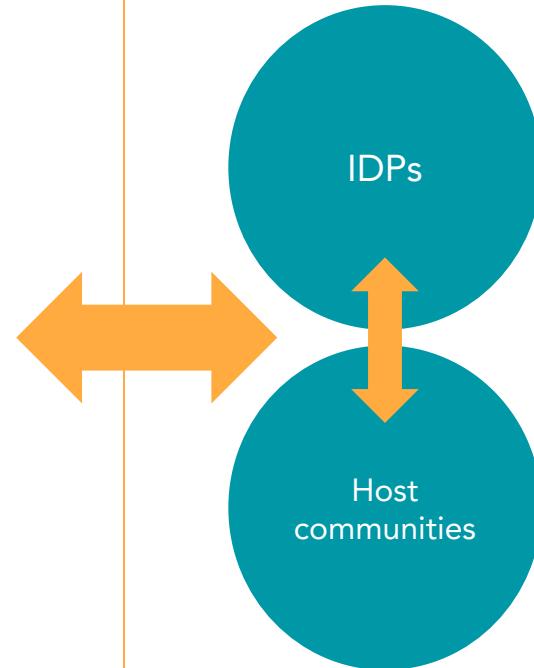
Donors



Banadir Regional Administration
(BRA)



NRC NORWEGIAN
REFUGEE COUNCIL



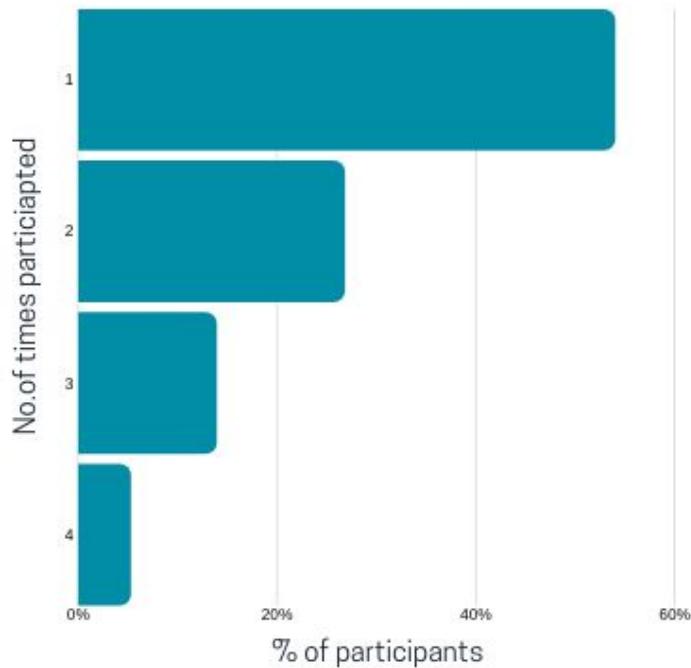
Consulting communities through interactive radio

- 4-show series of interactive radio
(radio debate driven by citizen input via SMS)
- Featuring guests from local authorities and NGOs
- Topics covered:
 - Displacement affected communities' notions of Durable Solutions
 - Social cohesion and discrimination against IDPs
 - Forced evictions and housing, land and property



Consulting communities through interactive radio

Patterns of participation

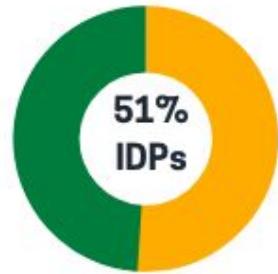
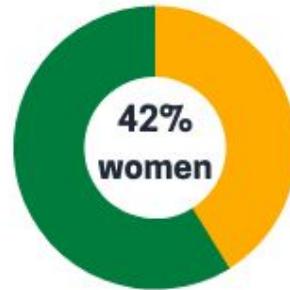


3,267
participants


14,391

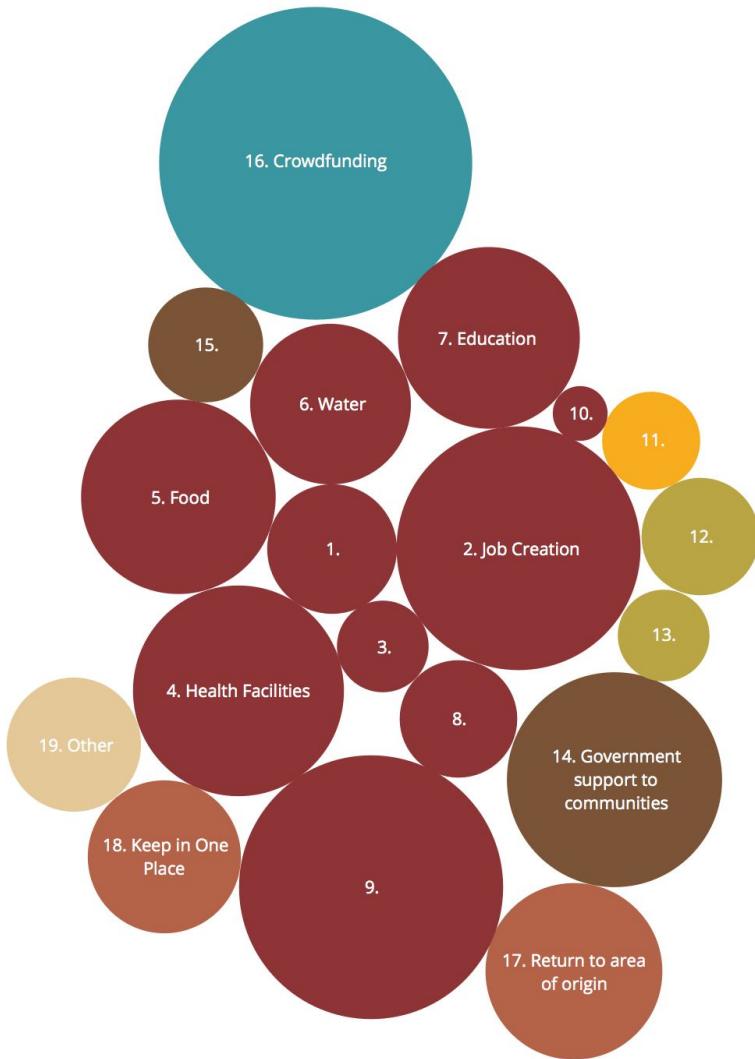


messages received



The dialogue was successful in reaching many people and was inclusive of vulnerable groups.

Almost half of participants (46.0%) participated in more than one week of discussion, suggesting participants value interactive radio as a channel for consultation and engagement.



Material Safety	1. Financial support 2. Job creation 3. Skills training 4. Availability of health facilities 5. Food assistance 6. Access to water 7. Access to education 8. Sanitation and hygiene 9. Shelter 10. Land
Physical Safety	11. Peace and security
Legal safety	12. Committee to be organized on displacement 13. Community consultation
Good governance	14. Government to support communities 15. Just and transparent delivery of aid
Crowdfunding	16. Crowdfunding
Location management	17. Return to area of origin 18. Keep in one place
Other	19. Other

An insight: Crowdfunding

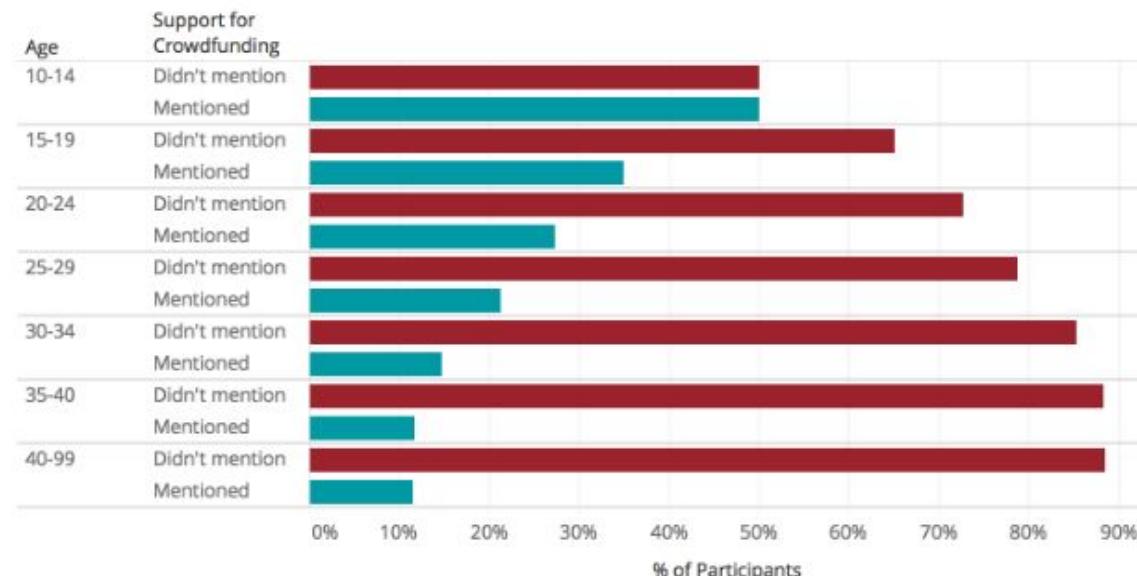
Citizens, including from host community and especially younger, support crowdfunding efforts to assist IDPs

"The best way we can assist the displaced is by all of us coming together and giving the little we can afford to those displaced who are in need." Male, Host, Dharkenley

"They can overcome this situation if they get assistance from people with money like business people and those who are in a position to and the whole Somali community."

Male 26 IDP, Dayinle

"The solution is for people to come together and help one another and then God will be on their side make things easier for them." Female, 20, IDP, Banadir



Having a valued voice

"I feel involved because community consultation is always the best thing to do and I personally believe that I am part of the decisions in the community and we appreciate a lot those who made this safe spaces to talk like the radio presenters, the leaders involved and those aid organisations who are involved as well."

Female participant

78%

of participants said that engaging with CSAP made them feel included in decision-making around durable solutions.

93%

Called for CSAP to be continued

Social research built on engaging with citizens on their terms as social agents, carries burdens:

- => The complicated media and communication spaces where people are e.g. local language FM radio
- => Curating (expensive) collective discussion and public recognition of voice, cf data extraction and/or surveillance
- => If you do this well you're going to get engagement in droves, and rich expression of opinion in local language with a lot of noise
- => So you end up with *a lot* of messy textual data, that you have to understand to get value in the world.
- => Complex mixed-methods needed to give this material expression to influence decisions that matter to citizens we engaged (our commitment to having opened the conversation)

What's the upside?

1. Citizens with a proven sense of being an agent in the world, and value the collective discussion in its own right
2. Rigorous, timely and meaningful evidence of social evidence, and those in power *feel* and *understand* the meaning differently because we retain human authenticity

AVF: Rethinking an alternative

ALL

COUNTRY

SECTOR

PARTNER



Promoting greater gender equality and social inclusion through media in Somalia (Somalia Stability Fund)



Using digital civic engagement to support land health interventions and the SHARED methodology in the Upper Tana river basin (ICRAF)



Somali citizen perspectives on humanitarian priorities in 2018 (REACH)



An Engagement Platform to Amplify Youth Voices (Mastercard Foundation)



Rapid Social Analysis for Health Interventions against Cholera in Somalia (Wellcome Trust)



NLP of conversations in Swahili Slang (Sheng) (Well Told Story)



Overcoming Barriers to Refugee Girls' Education in Kenya (WUSC)



Kenyan youth views on the 2017 election (Well Told Story)



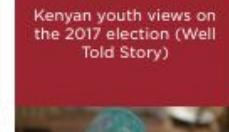
Somali people's views on local governance (UNICEF)



County budgets & taxes in Kenya (Oxfam)



Causes of Kenyan girls dropping out of school (Trócaire)



Child protection & gender equality in Somalia (UNICEF)

Towards new representation

Could technology help AVF?

Current technical approaches to data-action are unsatisfying. At best data science trades in statistics that you can analytically think about, but which convey no intuition.

Data science *senses* voices, it doesn't listen to them.

There is a chasm between data and action. Unscrupulous actors are filling this chasm, risking the mission of critical empiricism.

AVF is a credible candidate for socio-technically bridging the chasm.

The richness of qualitative methods, the reach and diversity of quantitative methods, and the coupling to agency to provide meaningful impact.

How do we make it more rigorous and timely?

What is interesting to a technologist about AVF?

The dilemma of technology



Social science is trapped between reductionism at scale OR local interpretation
Technology is trapped in an essentialist fetishisation of the machines' gaze

Can we transform the perspective of technology toward social action?
Can we break the interpretive dichotomy?



Ethical use of AI

Interpretation matters, and should be done by people

Augment not automate

Design for doubt, design for curiosity

CodaV2

Coda V2 +

https://coda-dev-229611.firebaseio.com/?dataset=ADSS_gender

Coda v2 Code by scheme message Continuous sorting Jump to next uncoded Auto Code Luke Church Sign out

Seq Message Gender WS - Correct Data...

0 ping NC (not coded) Khadija Mohamed

1 Nin male (m) Khadija Mohamed

2 lab male (m) Khadija Mohamed

3 LAB male (m) Khadija Mohamed

4 Dheddig female (f) Khadija Mohamed

5 dhadig female (f) Khadija Mohamed

6 20 WS (wrong scheme) age Khadija Mohamed

7 Lab male (m) Khadija Mohamed

8 dumar female (f) Khadija Mohamed

9 dhidig female (f) Khadija Mohamed

10 Mayo NC (not coded) Khadija Mohamed

11 18 sano WS (wrong scheme) age Khadija Mohamed

The screenshot shows the Coda V2 interface for a dataset named 'ADSS_gender'. The main view displays a list of 12 messages (Seq 0 to 11) with their content and associated gender codes. A secondary column, 'WS - Correct Data...', provides a reference for each message. The interface includes navigation buttons for 'Code by scheme' and 'message', and various filtering and sorting options like 'Continuous sorting' and 'Jump to next uncoded'. The top right shows user information for 'Luke Church'.

Messages

The screenshot shows the Coda v2 application interface for coding messages. At the top, there's a toolbar with various icons and a user profile for 'Luke Church'. Below the toolbar, a navigation bar includes tabs for 'scheme' and 'message', along with options for 'Continuous sorting' and 'Jump to next uncoded'. A prominent button labeled 'Auto Code' is also present.

The main area displays a table with two columns: 'Seq' and 'Message'. The 'Seq' column lists message identifiers from 0 to 11. The 'Message' column contains the actual text of each message. To the right of the table are two dropdown menus: 'Gender' (Scheme-12cb6f95) and 'WS - Correct Data...' (Scheme-f1fffc0e). Each message row has a checkbox next to its name, followed by a dropdown menu containing coding options. The dropdowns show various categories like 'NC (not coded)', 'male (m)', 'female (f)', 'WS (wrong scheme)', and 'age'. Some entries have a small checkmark icon next to them, indicating human confirmation. The last two rows (Seq 10 and 11) also feature a 'Scheme' dropdown.

Seq	Message	Gender	WS - Correct Data...
0	ping	✓ NC (not coded) Khadija Mohamed	
1	Nin	✓ male (m) Khadija Mohamed	
2	lab	✓ male (m) Khadija Mohamed	
3	LAB	✓ male (m) Khadija Mohamed	
4	Dheddig	✓ female (f) Khadija Mohamed	
5	dhadig	✓ female (f) Khadija Mohamed	
6	20	✓ WS (wrong scheme) Khadija Mohamed	✓ age Khadija Mohamed
7	Lab	✓ male (m) Khadija Mohamed	
8	dumar	✓ female (f) Khadija Mohamed	
9	dhidig	✓ female (f) Khadija Mohamed	
10	Mayo	✓ NC (not coded) Khadija Mohamed	
11	18 sano	✓ WS (wrong scheme) Khadija Mohamed	✓ age Khadija Mohamed

Automatically suggest labels

Efficient interface for selecting labels

✓ Indicates human confirmed

Coda V2

https://coda-dev-229611.firebaseio.com/?dataset=ADSS_gender

Code by scheme message Continuous sorting Jump to next uncoded Auto Code Luke Church Sign out

Seq Message Gender WS - Correct Data...

Seq	Message	Gender	WS - Correct Data...
537	DHDDIG	<input type="checkbox"/> female (f) Label Predictor (0.872)	<input type="checkbox"/>
538	DHADig	<input type="checkbox"/> female (f) Label Predictor (0.939)	<input type="checkbox"/>
539	colad	<input type="checkbox"/>	<input type="checkbox"/>
540	46sano	<input type="checkbox"/>	<input type="checkbox"/>
541	RAJUL	<input type="checkbox"/> male (m) Pipeline Auto-Coder	<input type="checkbox"/>
542	Rak	<input type="checkbox"/> male (m) Label Predictor (0.851)	<input type="checkbox"/>
543	Dheddig	<input type="checkbox"/> female (f) Pipeline Auto-Coder	<input type="checkbox"/>
544	L	<input type="checkbox"/>	<input type="checkbox"/>
545	Waan majijina 1\$	<input type="checkbox"/>	<input type="checkbox"/>
546	WAA 23	<input type="checkbox"/>	<input type="checkbox"/> age Label Predictor (0.986)
547	Halkee su alahan Layga waydiinoya yaana iwaydiinoya	<input type="checkbox"/> NC (not coded) Label Predictor (0.806)	<input type="checkbox"/>
548	waxan ahey odey 60 jir ah	<input type="checkbox"/>	<input type="checkbox"/> age Label Predictor (0.926)
549	DA,deeydu waa 25sano jir.	<input type="checkbox"/>	<input type="checkbox"/> age Label Predictor (0.995)
550	Sanadka 20	<input type="checkbox"/>	<input type="checkbox"/> age Label Predictor (0.939)

Low confidence => high salience

Insufficient confidence to give any label

Confident labelling

Coda V2

https://coda-dev-229611.firebaseio.com/?dataset=ADSS_gender

Code by scheme message Continuous sorting Jump to next uncoded Auto Code Luke Church Sign out

Seq Message Gender WS - Correct Data... Scheme-12cb6f95 Scheme-fffffc8e

Seq	Message	Gender	WS - Correct Data...
519	ANIGA IYO CARUTEYDI		age Label Predictor (0.997)
523	waxaa jiraa sodon sano		age Label Predictor (1.000)
526	my		age Label Predictor (0.990)
531	28 sano		age Label Predictor (1.000)
546	WAA 23		age Label Predictor (0.986)
548	waxan ahay odehy 60 jir ah		age Label Predictor (0.926)
549	DA,deeydu waa 25sano jir.		age Label Predictor (0.995)
550	Sanadka 20		age Label Predictor (0.939)
553	25 Sano		age Label Predictor (0.995)
556	waxan jiraa 14		age Label Predictor (0.995)
557	HAGE MAYA		age Label Predictor (0.973)
558	18 sano wall		age Label Predictor (0.996)
571	20 JIR		age Label Predictor (0.996)

Sort by label

Coda V2 +

localhost:8080/?dataset=ADSS_gender

Code by scheme message Continuous sorting Jump to next uncoded Auto Code Luke Church Sign out

Seq Message

		Gender	WS - Correct Data...
519	ANIGA IYO CARUTEYDI	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (0.997)
523	waxaa jiraa sodon sano	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (1.000)
526	my	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (0.990)
531	28 sano	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (1.000)
546	WAA 23	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (0.986)
548	waxan ahay odehy 60 jir ah	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (0.926)
549	DA,deeydu waa 25sano jir.	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (0.995)
550	Sanadka 20	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (0.939)
553	25 Sano	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (0.995)
556	waxan jiraa 14	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (0.995)
557	HAGE MAYA	<input checked="" type="checkbox"/> male (m) Luke Church	age Label Predictor (0.973)
558	18 sano wall	<input type="checkbox"/> <input type="checkbox"/>	age Label Predictor (0.996)
571	20 JIR	<input checked="" type="checkbox"/> male (m) Luke Church	age Label Predictor (0.996)

Logical inconsistency warning

(Rules provided by researchers)

Coda acts as a locus where different types of thinking are integrated

A screenshot of a Coda note titled "Seq 1 - Message". The table has two columns: "Seq" and "Gender". The "Gender" column contains dropdown menus for "Male" and "Female". Rows 1 through 11 show various names and their gender assignments. Row 11, "11 95 sano", includes a "VS - Connect Data..." button.

Seq	Gender
0	Male
1	Male
2	Male
3	Male
4	Female
5	Female
6	Male
7	Male
8	Female
9	Female
10	Male
11	Female

A screenshot of a Coda note titled "Seq 1 - Message". The table has two columns: "Seq" and "VS - Connect Data...". Rows 527 through 550 show various locations and their corresponding coordinates. Row 527, "527 Helke su alahan Lugo neipäivitys paikka neipäivitys", includes a "VS - Connect Data..." button.

Seq	VS - Connect Data...
527	Helke su alahan Lugo neipäivitys paikka neipäivitys
528	0,000000,0,000000
529	0,000000,0,000000
530	0,000000,0,000000
531	0,000000,0,000000
542	0,000000,0,000000
543	0,000000,0,000000
544	0,000000,0,000000
545	0,000000,0,000000
546	0,000000,0,000000
547	0,000000,0,000000
548	0,000000,0,000000
549	0,000000,0,000000
550	0,000000,0,000000

A screenshot of a Coda note titled "Seq 1 - Message". The table has two columns: "Seq" and "VS - Connect Data...". Rows 518 through 558 show various locations and their coordinates. Row 520, "520 venela maasid tara", is highlighted in red. Row 521, "521 28 tara", includes a "VS - Connect Data..." button.

Seq	VS - Connect Data...
518	0,000000,0,000000
519	0,000000,0,000000
520	venela maasid tara
521	28 tara
522	0,000000,0,000000
523	0,000000,0,000000
524	0,000000,0,000000
525	0,000000,0,000000
526	0,000000,0,000000
527	0,000000,0,000000
528	0,000000,0,000000
529	0,000000,0,000000
530	0,000000,0,000000
531	0,000000,0,000000
532	0,000000,0,000000
533	0,000000,0,000000
534	0,000000,0,000000
535	0,000000,0,000000
536	0,000000,0,000000
537	0,000000,0,000000
538	0,000000,0,000000
539	0,000000,0,000000
540	0,000000,0,000000
541	0,000000,0,000000
542	0,000000,0,000000
543	0,000000,0,000000
544	0,000000,0,000000
545	0,000000,0,000000
546	0,000000,0,000000
547	0,000000,0,000000
548	0,000000,0,000000
549	0,000000,0,000000
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553	0,000000,0,000000
554	0,000000,0,000000
555	0,000000,0,000000
556	0,000000,0,000000
557	0,000000,0,000000
558	0,000000,0,000000

Provenance tracing

Opinion

Source of change

Previous opinion

```
{_metadata": {  
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    "source":  
    "/root/.local/share/virtualenvs/app-4PlAip0Q/src/coredatamodules/core_data_modules/traced_data/io.py:813:import_coda_2_to_traced_data_iterable_multi_coded",  
    "timestamp": "2019-02-09T13:14:56.851370+00:00",  
    "user": "luke"  
},  
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    "_data": {  
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            "Confidence": 1,  
            "DateTimeUTC": "2019-01-14T15:24:03.197Z",  
            "Origin": {  
                "Name": "Sidney Ochieng",  
                "OriginID": "sidney@africasvoices.org",  
                "OriginType": "Manual"  
            },  
            "SchemeID": "Scheme-04998c27cdcb"  
        }  
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    "_metadata": {  
        "py/object": "core_data_modules.traced_data.traced_data.Metadata",  
        "source": "/root/.local/share/virtualenvs/app-4PlAip0Q/src/coredatamodules/core_data_modules/traced_data/io.py:731:import_coda_2_to_traced_data_iterable",  
        "timestamp": "2019-02-09T13:14:54.902020+00:00",  
        "user": "luke"  
    },  
    "_prev": {  
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                "Origin": {  
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                    "OriginID":  
                    "/home/princelysid/.local/share/virtualenvs/create_coda_files-DTaPV4-1/src/coredatamodules/core_data_modules/cleaners/somali/demographic_cleaner.py:32:clean_yes_no",  
                    "OriginType": "External"  
                },  
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            }  
        }  
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Technical maneuvers

Using AI to augment interpretative capacities of human researchers

Explicit representation of structural and value uncertainty

Using provenance tracing to maintain authenticity

Methods for Site Reliability Engineering applied in a humanitarian/development context



AI, used right, can help build

Engagement spaces justified by people feeling agency over decisions that affect them as well valuing the discussion in its own right

Rigorous and timely qualitative evidence and interpretive insight by humans, for decisions that matter, at scale

A different sense of 'socially-embodied' knowing, where we *feel* and *understand* differently because we retain human authenticity



I am calling for us to embrace a more complete imagination of the citizen; someone with a lifestyle, with a history [...] someone who knows things and has a capacity to make decisions. If we could elevate that discourse of citizenship then we could revive the political from the decline into which it has fallen in recent years.

Sheila Jasanoff

Cited in Leach, Scoones and Wynne (2005: 217)