

Truth in an Age of Information

Alan Dix



<https://alandix.com/>

@alanjohndix



Cardiff
Metropolitan
University

Prifysgol
Metropolitan
Caerdydd



Swansea University
Prifysgol Abertawe

Computational Foundry
Ffowndri Gyfrifiadol



UNDEB EYROPAID
EUROPEAN UNION

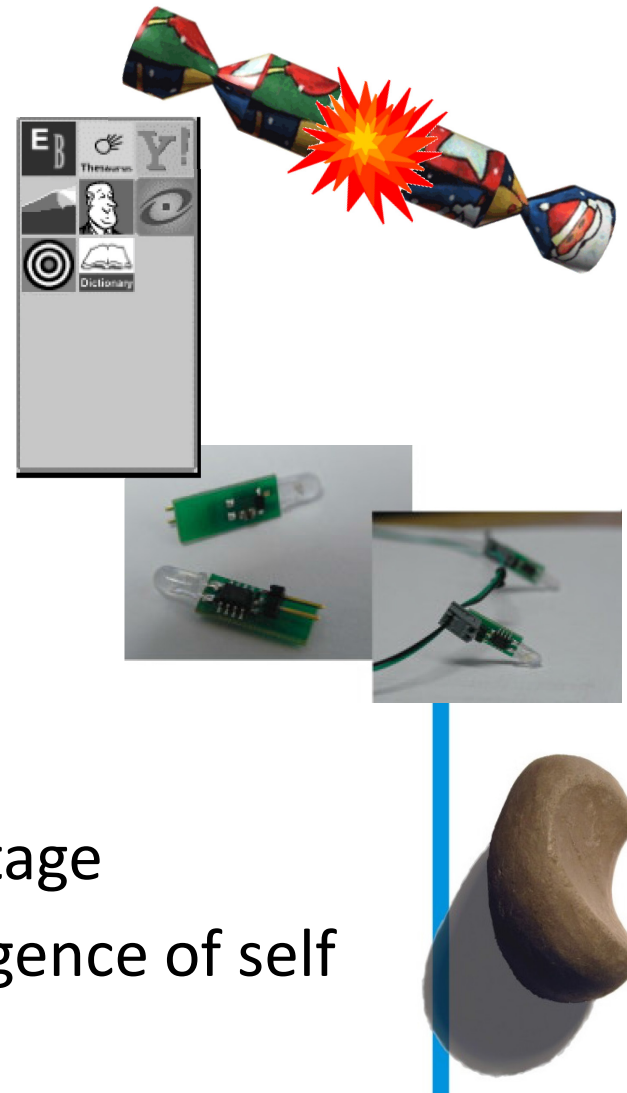


Llywodraeth Cymru
Welsh Government

Cronfa Datblygu
Rhanbarthol Ewrop
European Regional
Development Fund

today I am not talking about ...

- deep digitality and digital thinking
- next generation UX tools
- long tail of small data
- intelligent interfaces
- physicality
- now
- digital light
- walking round Wales
- virtual crackers and slow time
- digital humanities and community heritage
- modeling dreams, regret and the emergence of self



ALAN DIX, JANET FINLAY,
GREGORY D. ABOWD, RUSSELL BEALE

HUMAN-COMPUTER INTERACTION

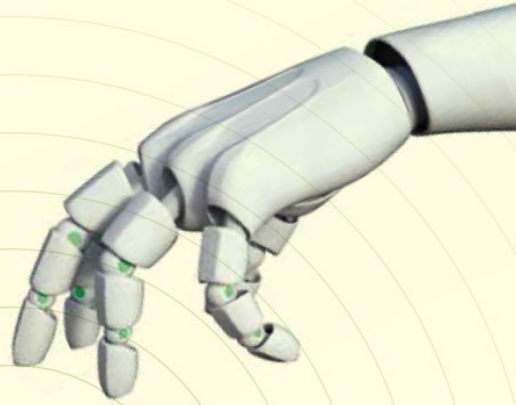
THIRD EDITION



<https://hcibook.com/e3/>

PEARSON
Prentice
Hall

UNDERSTANDING
DESIGN IN A
PHYSICAL-DIGITAL
WORLD



TOUCHIT

ALAN
DIX

STEVE
GILL

JO
HARE

DEVINA
RAMDUNY-ELLIS

Beacon Ring
Caer Digoll 3/4 m



Walking Wales



P.S.

Alan's on the road again ...

Truth in an Age of Information

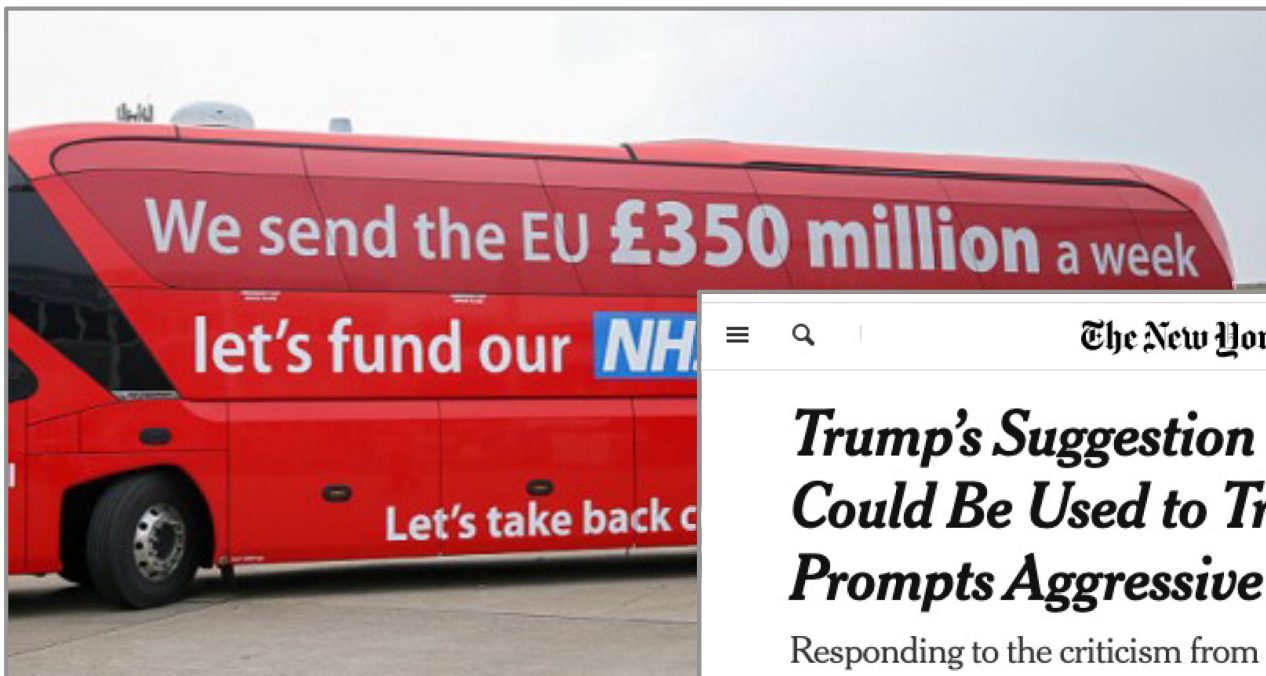
bad actors and good actors
... and those in the middle

fighting back
doing better

falsehood flies,
and
truth comes limping after it

Jonathan Swift

The Examiner No. 14, Thursday, 9th November 1710





The New York Times

Trump's Suggestion That Disinfectants Could Be Used to Treat Coronavirus Prompts Aggressive Pushback

Responding to the criticism from public health officials around the country, the president said he was playing a trick on reporters.



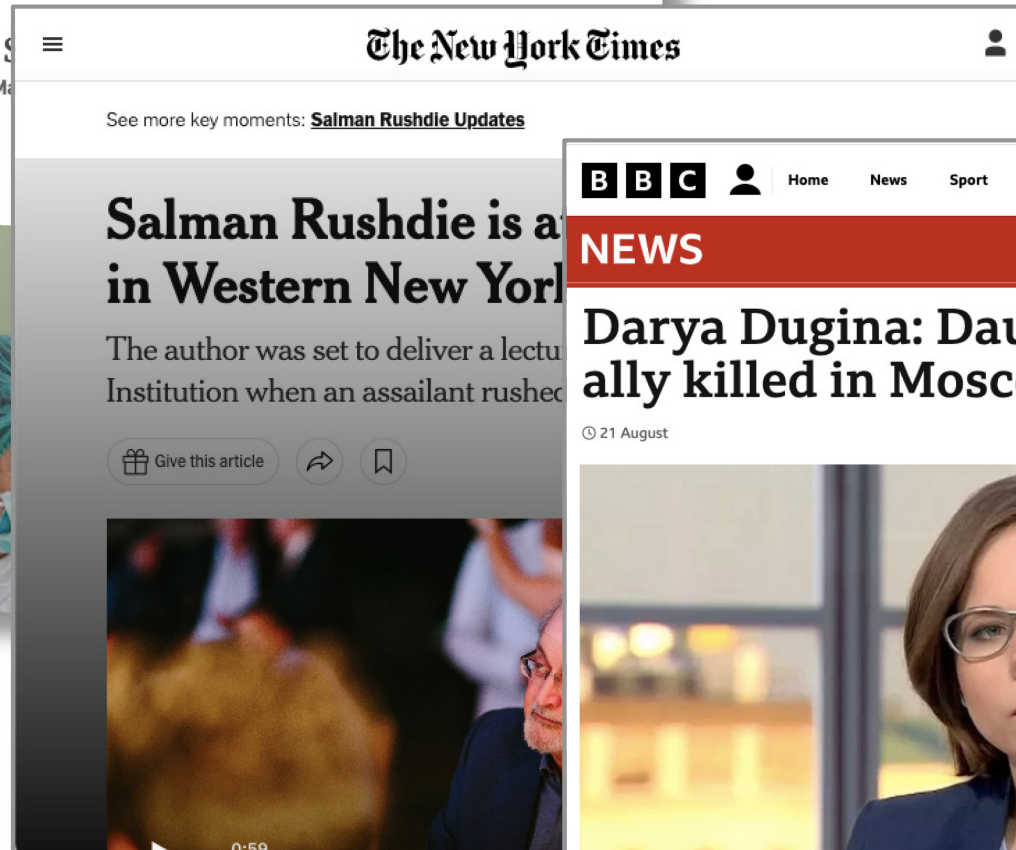
TIME

POLITICS • DONALD TRUMP

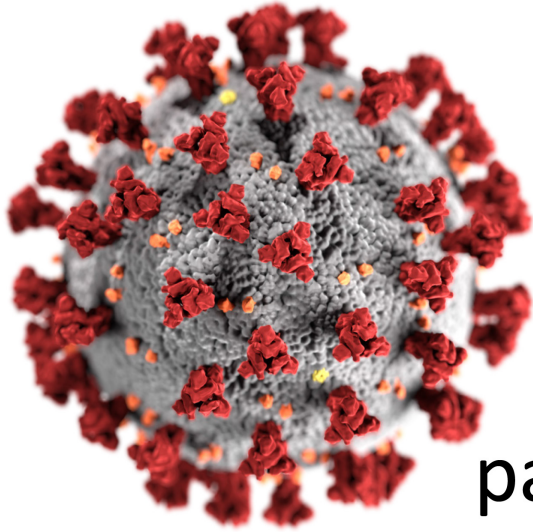
Here's What We Know So Far About Russia's 2016 Meddling



violence and assassination



crucial issues

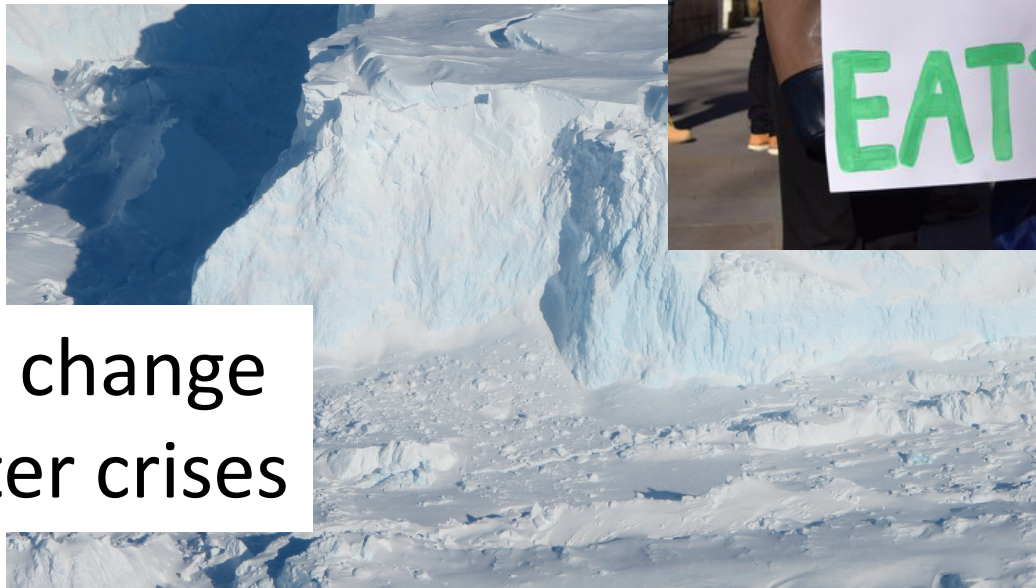


future
pandemics

growing
inequality



climate change
and water crises







a B-movie
cast



bad actors

intrinsically bad people, states, or media
... or just those on the 'other' side?

bad methods and/or bad information
inc. misinformation and hateful or violent content

sometimes tell the truth!
bad reasons — twisting facts, Astroturfing
maybe not not all bad

BSE (mad cow disease) ... no problem



good actors

don't always tell the truth ...

deliberate

- eg. war time ... Glasgow blitz

accidental

BBC – fact check

Q&A

What was wrong with the claim that the UK sends the EU £350m a week?

The claim that Britain “sends the EU £350m a week” is wrong because:

- The rebate negotiated by Margaret Thatcher is removed before anything is paid to Brussels. In 2014, this meant Britain actually “sent” £276m a week to Brussels; in 2016, the figure was £252m.
- Slightly less than half that sum - the money that Britain *does* send to the EU - either comes back to the UK to be spent mainly on agriculture, regional aid, research and community projects, or gets counted towards the country’s international aid target.

poor numeracy ... e.g. Greenland ice

hard to notice flaws when you agree

... academic papers?

outcomes ...

mistakes – e.g. £350 million

spinning – selection, quote marks

emphasis – headlines vs. last paragraph

subtle language – passive vs active

images – misleading placement, cropping

sometimes deliberate
often simply human bias

I worry most about poor arguments
from those with whom I agree

loss of moral force

easy to refute

loss of confidence in media

life is maybe
more like a
Clint Eastwood
movie

an ecology of (mis)information

producers

information

consumers

our side

true

ignore

other side

slanted

choose the
convenient

really bad

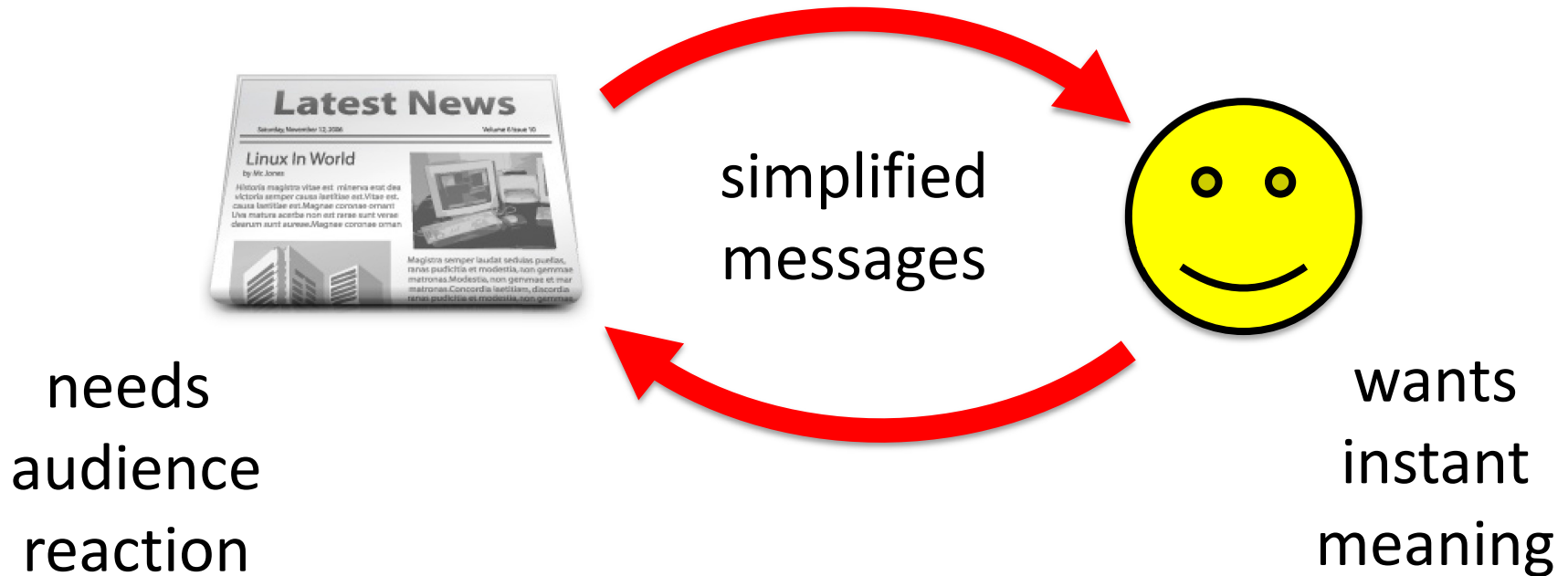
false

excuse

play
“swop the
politician”

feedback effects

downward spiral
exacerbated by internet





two paths

fighting back

doing better

two paths

fighting back

doing better

echo chambers and filter bubbles

lots of work

- network visualisations of information flows
- counter-views ... tend not to work if too counter

the ecology

- media – preaching to the converted
- public – idea that search is neutral

being liberal?

argumentation

fact checking sites

- out of context, misinterpreted
 - state interpretation, show full source
- checking data ... “beyond my pay grade”

teaching rhetoric?

- debating classes, flipping sides
- academic papers too!

argumentation systems

- gIBIS, QOC, Deb8

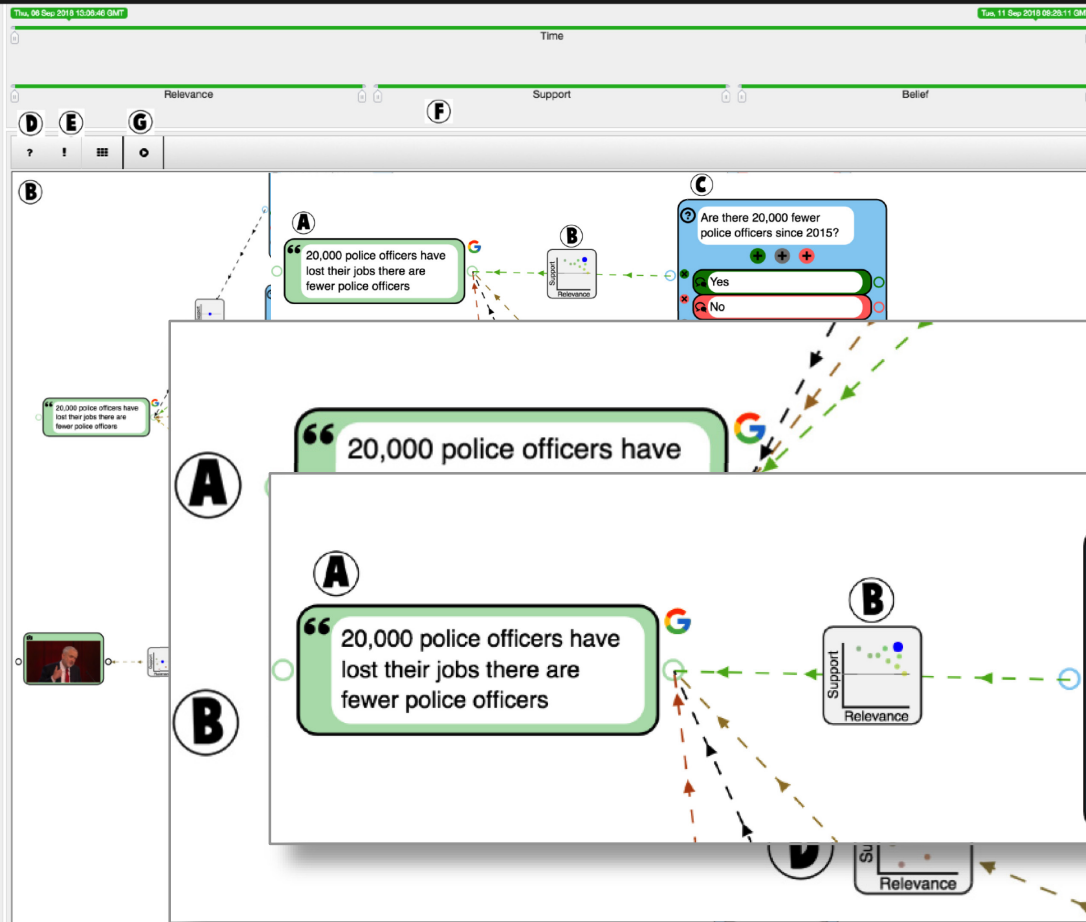
Share your
INTERPRETATION
for validation
Karen Holtzblatt

Deb8

Deb8 HOME You're now connected to Debate_Miguel



have talked about our foreign interventions and our safety here at home what happened in Manchester was unbelievably abominable in every way innocent lives were taken but mainly young women out enjoying themselves I want to live in a country that protects the right of people to go out and enjoy themselves at any town or any city in this country the consequences of that are appalling to those families and I hope those that are perpetrated this act are all discovered and brought to book but there's also a question we have to ask about the number of police officers



Support The Guardian

The Guardian

News Opinion Sport Culture Lifestyle

UK UK politics Education Media Society Law Scotland More

Police

Britain's police budgets to lose £700m by

and a dispute between the government and much of the police service in advance of the chancellor's budget later this month.

Watchdog says police cuts have left forces in 'perilous state'

Read more

Police chiefs said they needed more than £400m extra a year to stem rising demands, including relating to increasing crime, and, if rebuffed, could have to cut officers and further ration services, they said.

data and provenance

quotes and context

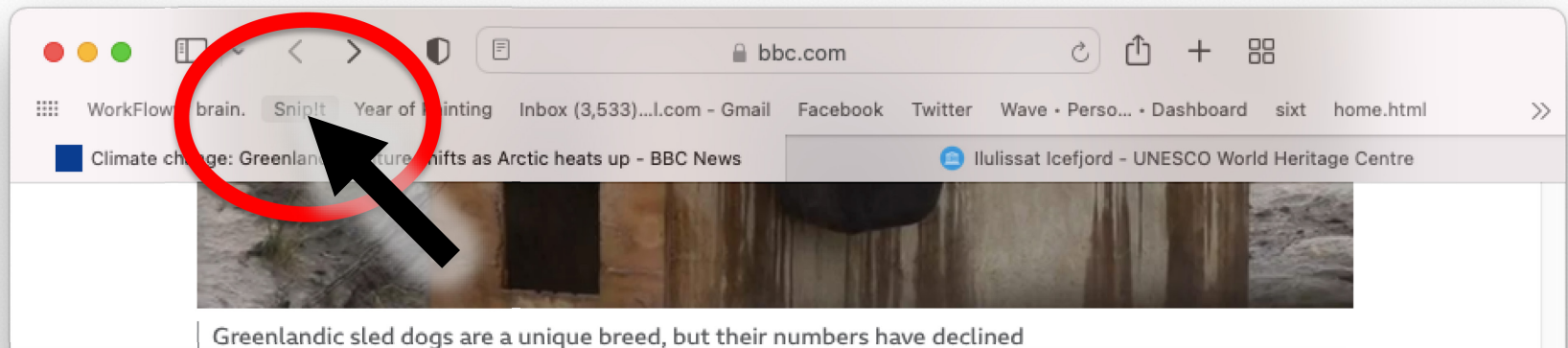
Snip!t

“the camera never lies” (late 19th C)

Four Corners

make it easy!

1970s file systems, Word and PPT



Snip!t

Snipped

It is an outlet of the Greenland ice cap. Over 35,000 cu... calve from the glacier each year, and more icebergs spew... than anywhere else in the northern hemisphere.

Climate change: Greenland's culture shifts as Arctic heats up - BBC News
<https://www.bbc.com/news/world-europe-63135211>

Tour boat skipper George Jonathansen skilfully weaves around these giants. Even young people like him have seen change within their lifetimes.

"When I was a kid, the weather was more predictable. Nowadays... we never know how the winter is going to be," he says.

"I think this year has been unusual compared to the others." This summer was cold, he says, "A lot of places in Greenland have record rain."

When asked about climate change, Palle Jerimiassen, the local mayor of Avannaata district says: "We can feel it everyday. We can see it every day."

data and provenance

quotes and context

Snip!t

“the camera never lies” (late 19th C)

Four Corners

make it easy!

1970s file systems, Word and PPT

Four Corners Project

[How it works](#) [Create your own](#) [Gallery](#) [About](#) [Contact](#)

Cheney Orr



Backstory



It was about 4 a.m. and roughly 20 minutes after the first shooting. When the first shooting occurred I was two blocks away and people scattered. Police barricades were stampeded. When the second shooting occurred I was on the corner of Franklin and Empire, half a block away. The gunshot was a light pop and sounded almost like a firecracker. A few peo-

data and provenance

quotes and context

Snip!t

“the camera never lies” (late 19th C)

Four Corners

make it easy!

1970s file systems, Word and PPT

numerical data

numeric data and innumeracy

- more BBC – 35,000 m³ vs 35 km³

qualitative–quantitative reasoning

- iVolver
- worksheets

NEWS

[Home](#) | [War in Ukraine](#) | [Coronavirus](#) | [Climate](#) | [Video](#) | [World](#) | [UK](#) | [Business](#) | [Tech](#) | [Science](#) | [Stories](#) | [More](#)[World](#) | [Africa](#) | [Asia](#) | [Australia](#) | [Europe](#) | [Latin America](#) | [Middle East](#) | [US & Canada](#)

Climate change: Greenland's culture shifts as Arctic heats up

🕒 12 October



Climate change

All of this ice is missing now, Fennimaa says as he points to a map of the Sermeq Kujalleq or Jakobshavn glacier.

It is an outlet of the Greenland ice cap. **Over 35,000 cubic metres of ice** calve from the glacier each year, and more icebergs spew into Disko Bay than anywhere else in the northern hemisphere.



All of this ice is missing now, Flemming says as he points to a map of the Sermeq Kujalleq or Jakobshavn glacier.

It is an outlet of the Greenland ice cap. **Over 35,000 cubic metres of ice** calve from the glacier each year, and more icebergs spew into Disko Bay than anywhere else in the northern hemisphere.



unesco

World Heritage Convention



Ilulissat Icefjord

Description

Maps

Documents

Galleries

Ilulissat Icefjord

Located on the west coast of Greenland, 250 km north of Nuuk, Ilulissat Icefjord is the sea mouth of Sermeq Kujalleq, one of the few glaciers in the world which the Greenland ice cap reaches the sea. Sermeq Kujalleq is one of the most active glaciers in the world. It annually calves over 35 km³ of ice, the production of all Greenland calf ice and more than any other glacier. Studied for over 250 years, it has helped to develop our understanding of climate change and icecap glaciology. The combination of a huge ice-sheet and the dramatic sounds of a fast-moving glacial ice-stream calving into a fjord covered by icebergs

numerical data

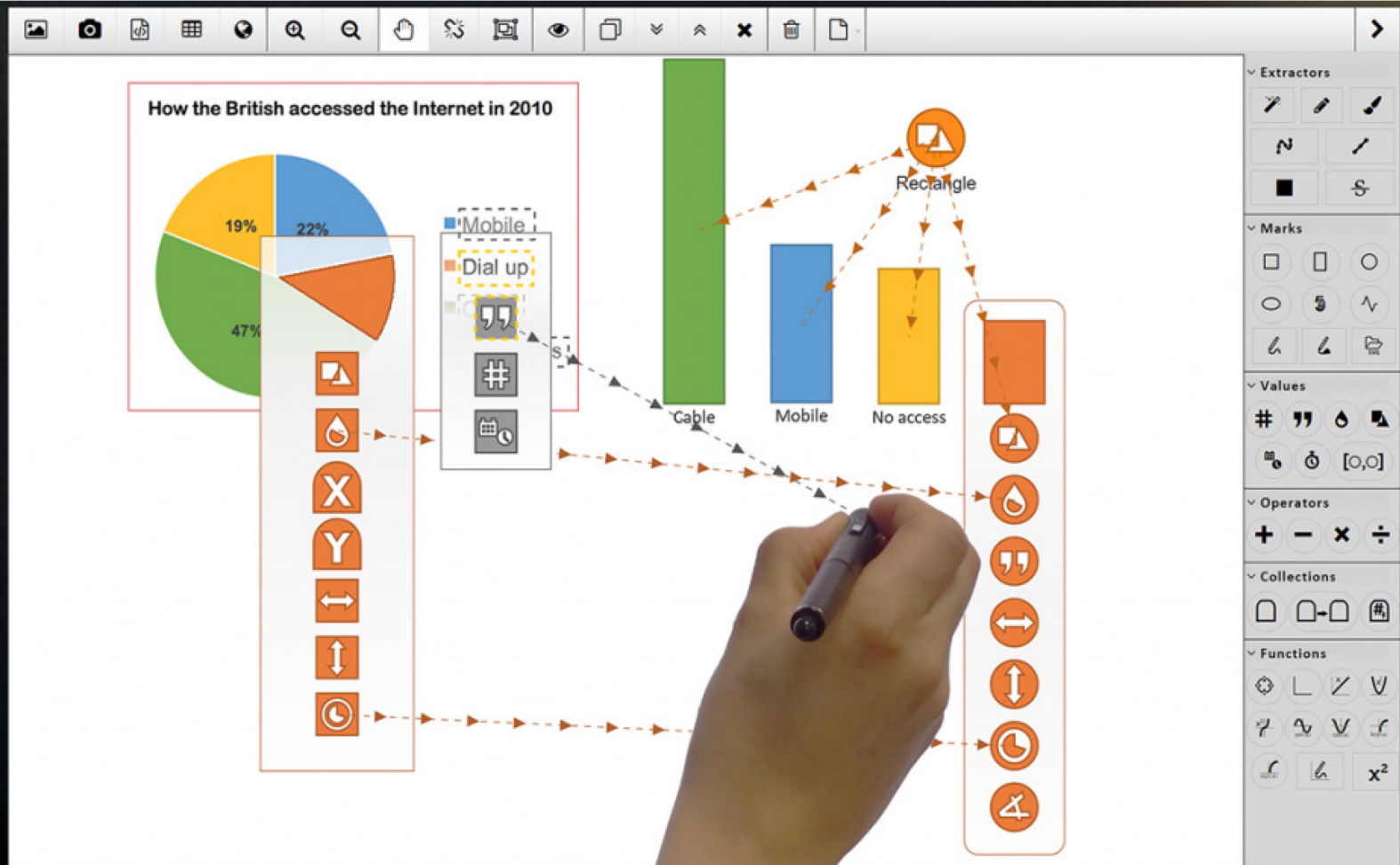
numeric data and innumeracy

- more BBC – 35,000 m³ vs 35 km³

qualitative–quantitative reasoning

- iVolver
- worksheets

iVolver



WS2 (worksheets)

- minimum wage at 37 hour week; currently 16,777.28 * (source [ACAS](#))
- median wage; currently £30800 * (source [ONS](#))
- top of basic rate tax; currently £50000 * (source [GOV.UK](#))
- high earner £100,000 – top 3% of tax payers (source [GOV.UK](#))

Income	Tax_rate	NI_rate	Loss_tax_allow	Extra_tax	Loss_NI_lower	Loss_NI_upper	Net_gain
16777.28 *	20 *	12 *	2,500.00 *	838.86 *	1,141.92 *	0.00 *	2,719.22 *
30800 *	20 *	12 *	2,500.00 *	1,540.00 *	1,141.92 *	0.00 *	2,018.08 *
50000 *	20 *	12 *	2,500.00 *	2,500.00 *	1,141.92 *	0.00 *	1,058.08 *
100000 *	40 *	2 *	5,000.00 *	5,000.00 *	1,141.92 *	4,997.60 *	-8,939.52 *

WS2 (worksheets)

- minimum wage at 37 hour week; currently 16,777.28 * (source [ACAS](#))
- median wage; currently £30800 * (source [ONS](#))
- top of basic rate tax; currently £50000 * (source [GOV.UK](#))
- high earner £100,000 – top 3% of tax payers (source [GOV.UK](#))

Income	Tax_rate	NI_rate	Loss_tax_allow	Extra_tax	Loss_NI_lower	Loss_NI_upper	Net_gain
16777.28 *	20 *	12 *			141.92 *	0.00 *	2,719.22 *
30800 *	20 *	12 *			141.92 *	0.00 *	2,018.08 *
50000 *	20 *	12 *	2,500.00 *	2,500.00 *	1,141.92 *	0.00 *	1,058.08 *
100000 *	40 *	2 *	5,000.00 *	5,000.00 *	1,141.92 *	4,997.60 *	-8,939.52 *

loss_tax_allow =
 $\text{pers_tax_allowance} \times \text{tax_rate} / 100 -$
 loss of tax allowance

WS2 (worksheets)

- minimum wage at 37 hour week; currently 16,777.28 * (source [ACAS](#))
- median wage; currently £30800 * (source [ONS](#))
- top of basic rate tax; current
- high earner £100,000 – top

Income	Tax_rate	NI_rate	Loss_tax_allow		ss_NI_upper	Net_gain
16777.28 *	20 *	12 *	2,500.00 *			
30800 *	20 *	12 *	2,500.00 *			
50000 *	20 *	12 *	2,500.00 *	2,500.00 *	1,141.92 *	1,058.08 *
100000 *	40 *	2 *	5,000.00 *	5,000.00 *	4,997.60 *	-8,939.52 *

extra_tax

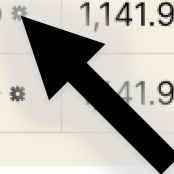
additional tax due to higher rates

= 2500

= income* tax_inc/100

income = 50000

tax_inc = 5





call to action

tools and methods

for press

for public

for politicians

...

and academics too!



A person is walking away from the camera on a beach at sunset. The ocean is in the foreground with gentle waves. In the background, there are mountains under a warm, orange sky. The text is overlaid on the image.

Truth in an Age of Information

we can make a difference

Alan Dix

<https://alandix.com/academic/talks/CHIRA2022-keynote/>