



Data

Stephen Downes

December 4, 2021

Data

 **da·ta**
/ˈdɑːdə, ˈdɑːdə/

See definitions in:

All

Computing

Philosophy

noun

facts and statistics collected together for reference or analysis.

"there is very little data available"

Similar:

facts

figures

statistics

details

particulars

specifics

features



- the quantities, characters, or symbols on which operations are performed by a computer, being stored and transmitted in the form of electrical signals and recorded on magnetic, optical, or mechanical recording media.
- **PHILOSOPHY**
things known or assumed as facts, making the basis of reasoning or calculation.



Definitions from Oxford Languages

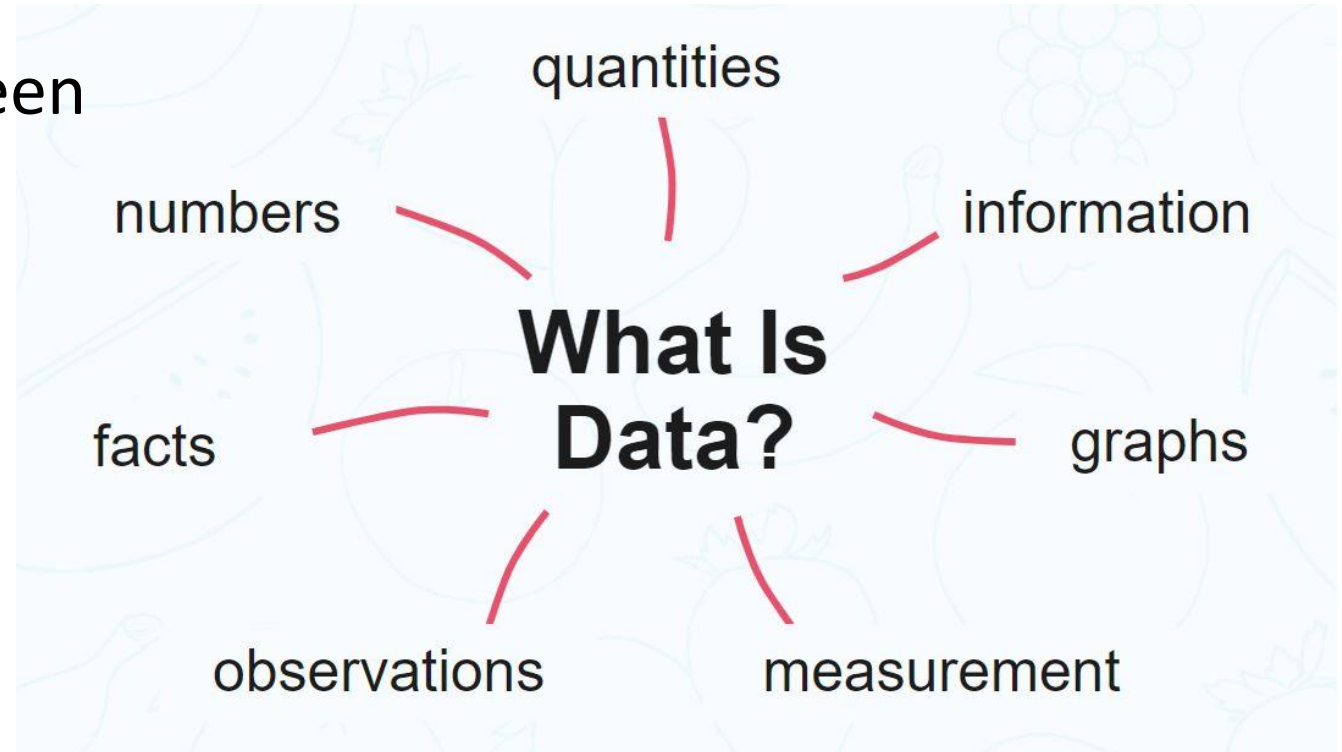
Feedback

<https://www.google.com/search?q=what+is+data>

<https://en.wikipedia.org/wiki/Data>

Data for Computation

- data is information that has been translated into a form that is efficient for movement or processing.
- data is information converted into binary digital form
- Raw data is a term used to describe data in its most basic digital format.



Jack Vaughan <https://searchdatamanagement.techtarget.com/definition/data>

<https://www.analyticsvidhya.com/blog/2021/04/statistics-and-probability-concepts-for-data-science/>

Data and the End of Theory



Illustration: Marian Bantjes "All models are wrong, but some are useful."

“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.”

Chris Anderson, 06.23.2008, The End of Theory: The Data Deluge Makes the Scientific Method Obsolete, Wired
<https://www.wired.com/2008/06/pb-theory/>

Critical Questions for Big Data

- better tools, services, and public goods?
 - Or privacy incursions and invasive marketing?
- understand online communities and political movements?
 - Or track protesters and suppress speech?
- transform how we study human communication and culture
 - or narrow the palette of research options
 - alter what 'research' means?

danah boyd & Kate Crawford - Critical Questions for Big Data

<https://www.dhi.ac.uk/san/waysofbeing/data/communication-zangana-boyd-2012.pdf>



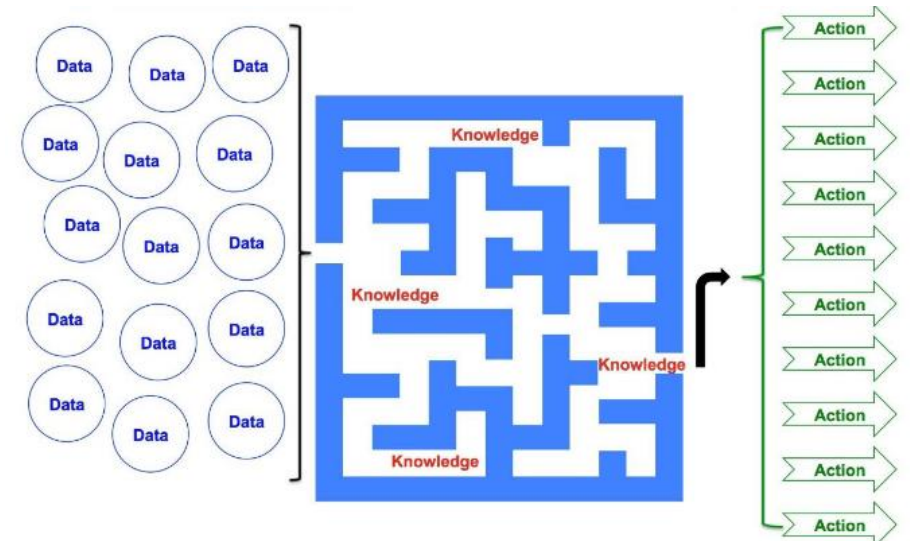
Critical Questions for Big Data

Big Data as a cultural, technological, and scholarly phenomenon that rests on the interplay of:

1. Technology
2. Analysis
3. Mythology

danah boyd & Kate Crawford - Critical Questions for Big Data

<https://www.dhi.ac.uk/san/waysofbeing/data/communication-zangana-boyd-2012.pdf>



https://www.odni.gov/files/PE/Documents/2---2017-AEP_Community-Resilience.pdf

the widespread belief that large data sets offer a higher form of intelligence and knowledge that can generate insights that were previously impossible, with the aura of truth, objectivity, and accuracy.

Critical Data Studies

→ Seven provocations:

```
00 00 00 00 2e 00 4e 00 65 00 74 00 20 00 53 00 | .....N
65 00 61 00 6c 00 00 00 34 00 10 00 01 00 50 00 | e.a.l..
72 00 6f 00 64 00 75 00 63 00 74 00 56 00 65 00 | r.o.d.u
72 00 73 00 69 00 6f 00 6e 00 00 00 31 00 2e 00 | r.s.i.o
33 00 2e 00 31 00 2e 00 30 00 00 00 38 00 10 00 | 3...l..
01 00 41 00 73 00 73 00 65 00 6d 00 62 00 6c 00 | ..A.s.s
79 00 20 00 56 00 65 00 72 00 73 00 69 00 6f 00 | y. .V.e
6e 00 00 00 31 00 2e 00 33 00 2e 00 31 00 2e 00 | n...l..
30 00 00 00 44 00 00 00 00 00 56 00 61 00 72 00 | 0...D..
46 00 69 00 6c 00 65 00 49 00 6e 00 66 00 6f 00 | F.i.l.e
00 00 00 00 24 00 04 00 00 00 54 00 72 00 61 00 | ....$.
6e 00 73 00 6c 00 61 00 74 00 69 00 6f 00 6e 00 | n.s.l.a
00 00 00 00 00 00 b0 04 70 38 44 2d 54 5f 34 4d | .....
30 74 5f 63 5f 5f 68 79 2d 7a d4 64 64 67 67 67 | 0t_c_hy
67 6b 6b 6b 6b 6a 69 69 69 21 21 21 21 21 21 21 | gkkkkji
21 61 61 61 61 61 61 61 61 61 61 61 61 61 61 | !aaaaaa
61 61 61 61 61 61 61 61 61 61 61 61 61 61 61 | aaaaaaa
61 61 61 61 61 19 19 19 19 27 46 00 0e 0e c2 cb | aaaaa..
98 b9 71 72 be 8b ac 00 68 d1 44 64 d4 46 b5 1c | ..qr...
8e ef 5c 7c df 40 ae 1c 8b ff 1f 81 e6 06 78 ed | ..\|.
5b 7b e4 52 72 b6 05 58 78 e5 54 b8 1d 4b 58 65 | [{.Rr..}
```

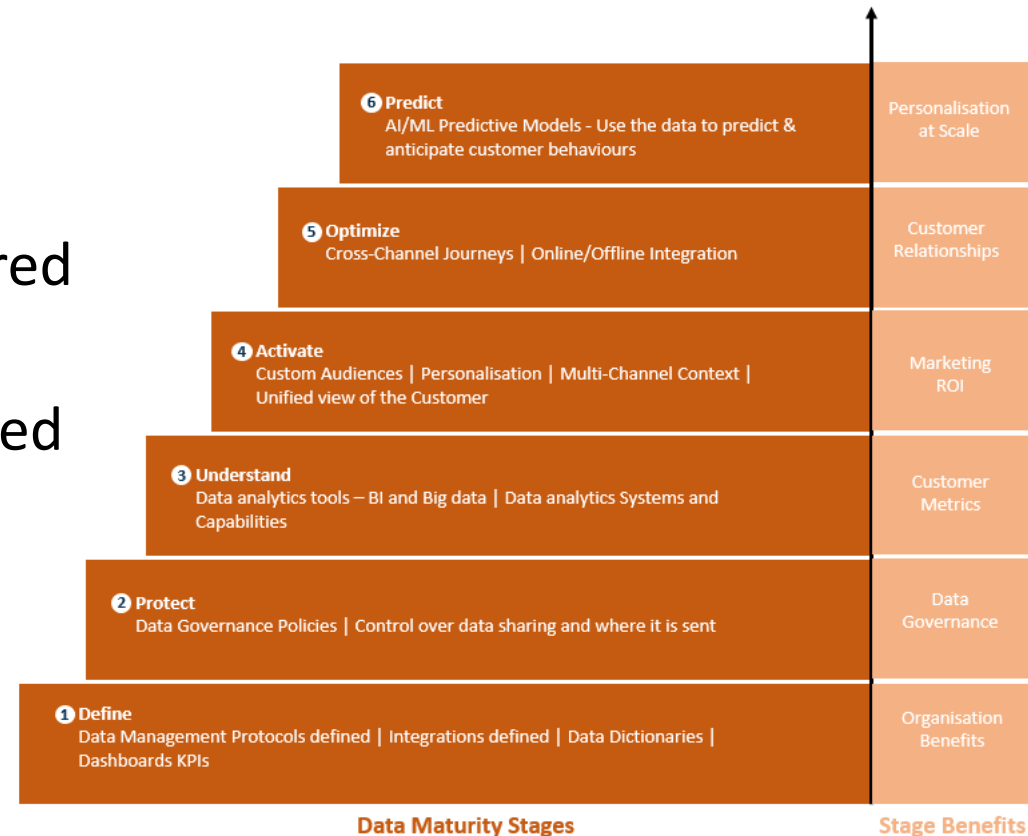
- Situating 'big data' in time and space
- Technology is never as neutral as it appears
- 'Big data' does not determine social forms
- Data is never raw
- Big isn't everything
- Counter-Data
- What is our praxis?

Craig Dalton and Jim Thatcher, May 12, 2014, What Does A Critical Data Studies Look Like, And Why Do We Care? <https://www.societyandspace.org/articles/what-does-a-critical-data-studies-look-like-and-why-do-we-care>

The Context of Critical Data Studies

CDS asks questions about:

- how we define data
- what data are not considered
- how data are produced
- How data are conceptualized
- How data are employed.



Prinsloo 2019 <https://epress.lib.uts.edu.au/journals/index.php/JLA/article/view/6589/7307>

<https://gunjan-aggarwal.medium.com/six-steps-to-data-maturity-a-maturity-model-for-data-management-while-adopting-a-cdp-52575663fbd6>

Data Sources

- Data from LMSs (e.g. Instructure: Hill, 2019; Stein, 2019)
 - Engagement Statistics
 - Performance Statistics
- Student interactions and discussion forum posts (Seufert, et.al., 2019)
- Social media and sources outside the learning context
- Data resulting from active intervention (Hand, 2018)

<https://elearningindustry.com/sources-of-learning-analytics-should-collecting>

Ackermann <https://www.chapters.indigo.ca/en-ca/books/data-instruments-and-theory-a/9780691611884-item.html>

