Returning the data gaze: Data activism in higher education and beyond

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Student information systems collect data about prior qualifications, socio-economic status, ethnic group, financial situation, and hours worked by students (Sclater et al. 2016). Learners create data traces though their digital artefacts and movements may be tracked using geolocation data (Jones 2019; Sclater et al. 2016). Biometric data from wearable devices may be collected to document students' stress and sleep patterns (Arriba Pérez et al. 2016). Other digital actors in the learning process (e.g., ebooks and intelligent tutors) offer up data (Sclater et al. 2016) and students may reveal sensitive information as they create profiles on 3rd-party apps they are required to use (Jones 2019). More data creeps in as digital records are augmented with information about financial aid, disciplinary and criminal reports, personal health, and extensive data profiles from admissions applications (Jones 2019).

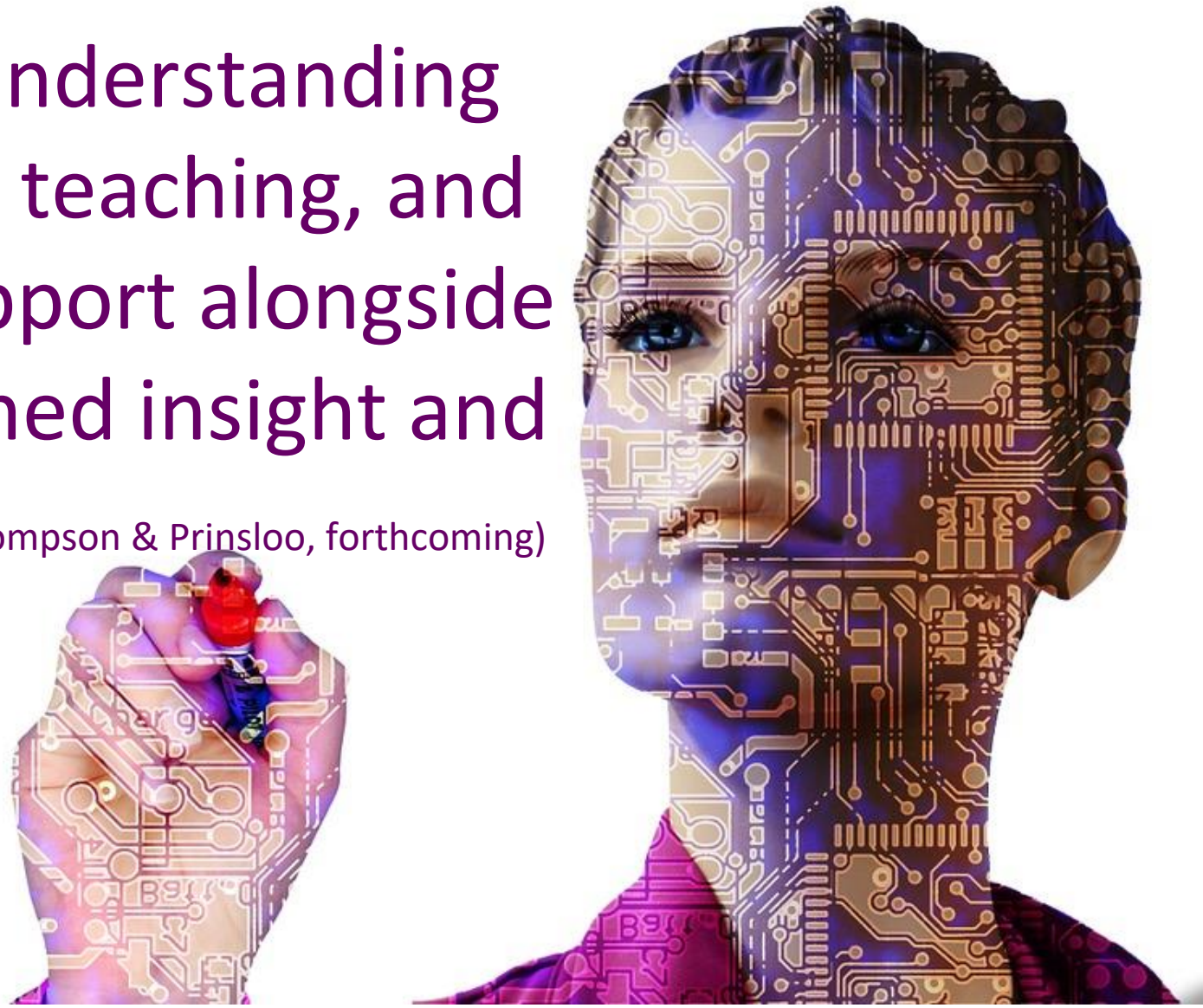
accounting for the contextual idiosyncrasies of fragmentary data from multiple sources

biased and unrepresentative data sets

lack of algorithmic transparency

easy-to-use software tools for creating data-trained learning analytics but limited understanding of the inner workings of such systems

what do learning analytics offer? centralisation of a particular understanding of learning, teaching, and student support alongside data-informed insight and foresight (Thompson & Prinsloo, forthcoming)



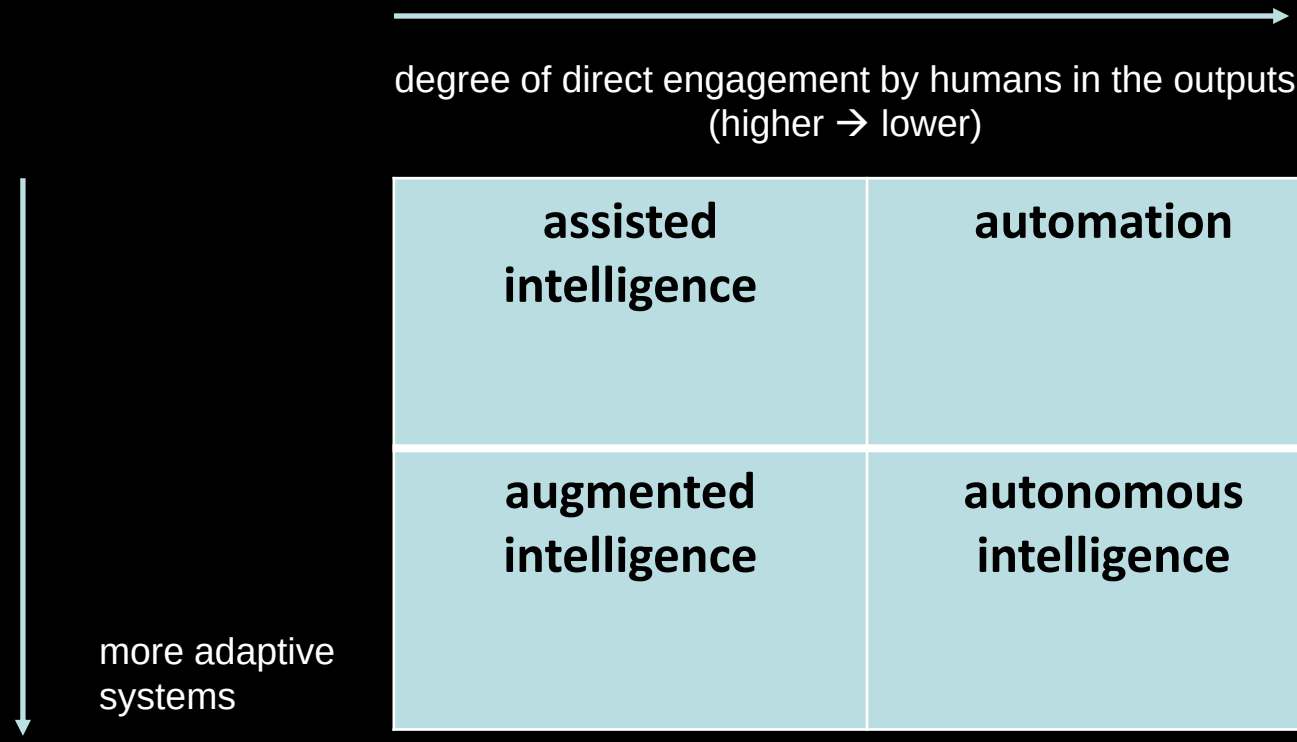
everything from

Descriptive Analytics: tells you what happened in the past.

Diagnostic Analytics: helps you understand why something happened in the past.

Predictive Analytics: predicts what is most likely to happen in the future.

Prescriptive Analytics: recommends actions you can take to affect those outcomes (Brinkman, 2020)



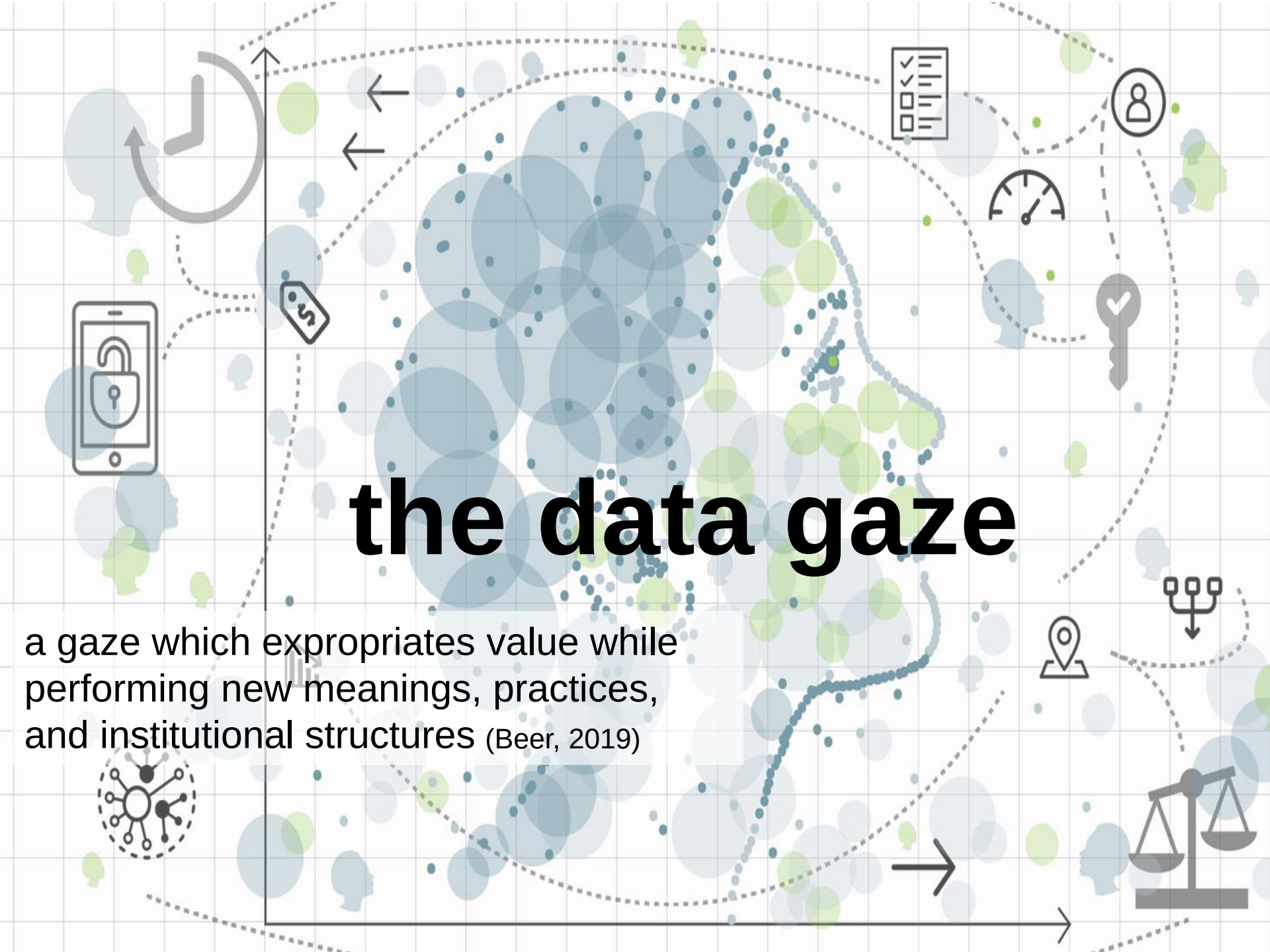
PwC (2017)
Sizing the Prize

learning analytics – and other data-driven systems and forms of AI - vary based on the positioning of the human vis-a-vis the technology and how adaptive the digital assemblage is

documentation not datafication?

the effect is not mere datafication but something that is more far-reaching and serious, “alter[ing] the very ontological status of the student, who is rendered—who unwittingly becomes—a digital document … no longer exist[ing] outside the baroque entanglements of digital surveillance”

Gourlay (2021) Posthumanism and the Digital University



the data gaze

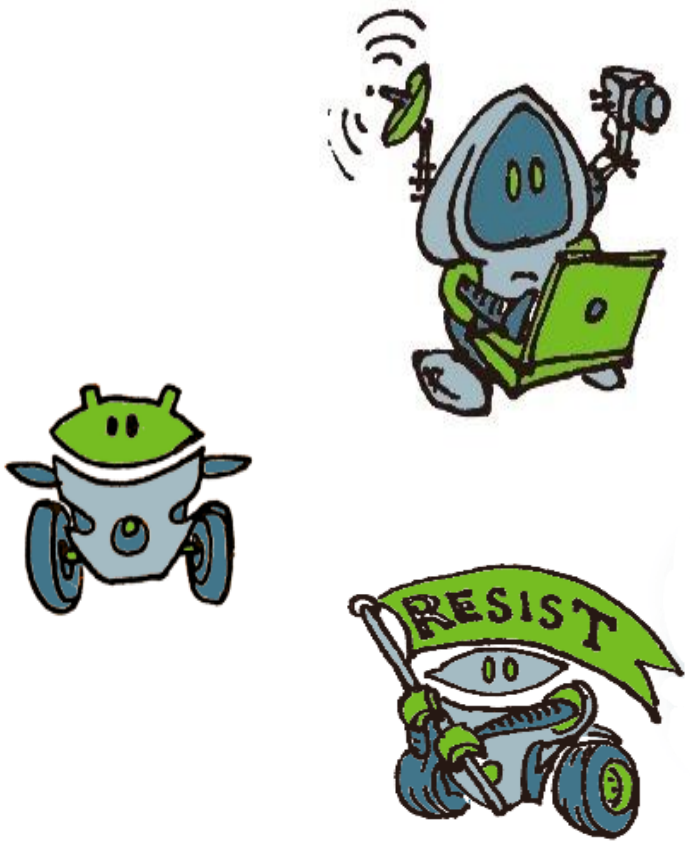
a gaze which expropriates value while performing new meanings, practices, and institutional structures (Beer, 2019)

sociomaterial & more-than-human theorizing / feminist work in critical data studies / technography (i.e., Bucher, 2016)

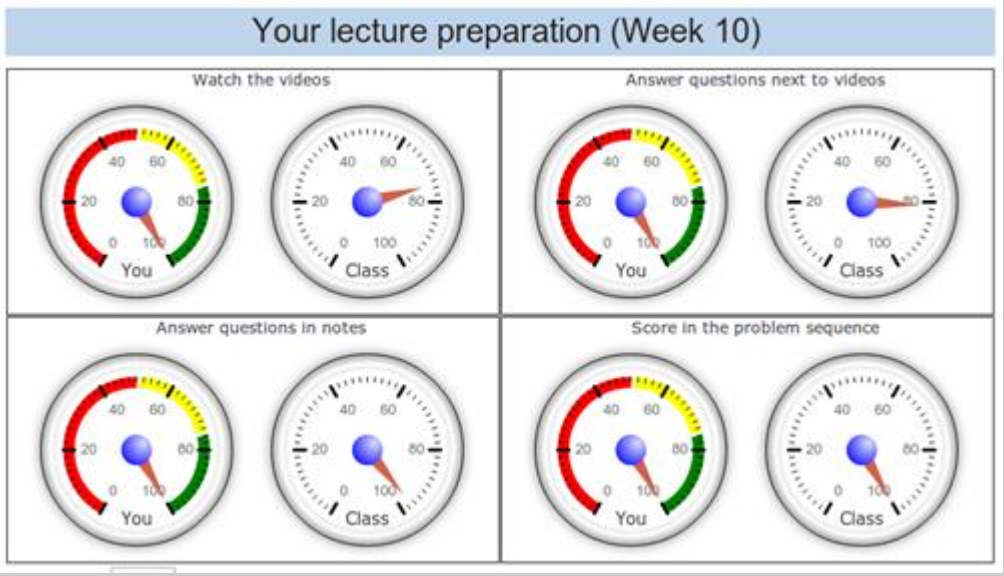
live with through in outside data

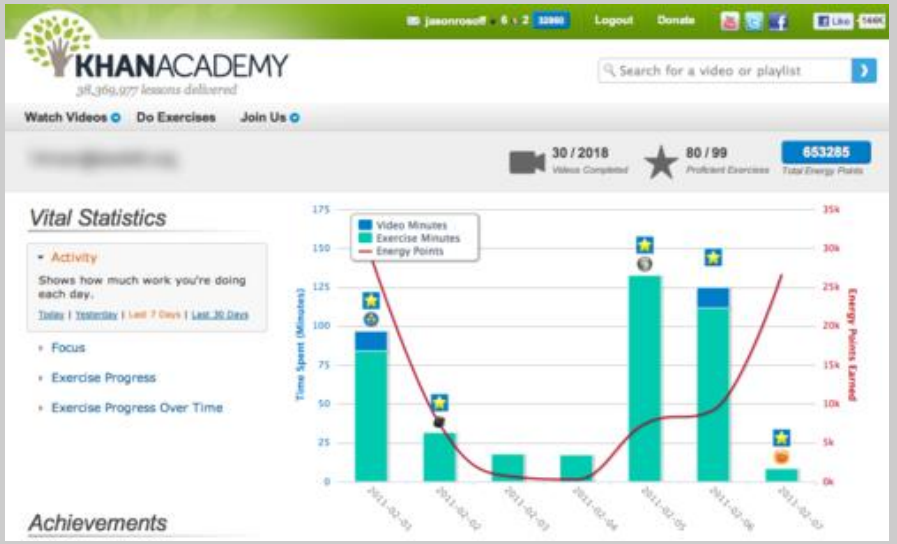
the ways in which data and interfaces are … always already engaged in the processes by which bodies and people have become and are becoming visible to themselves, others and nation-states

Wernimont (2019)

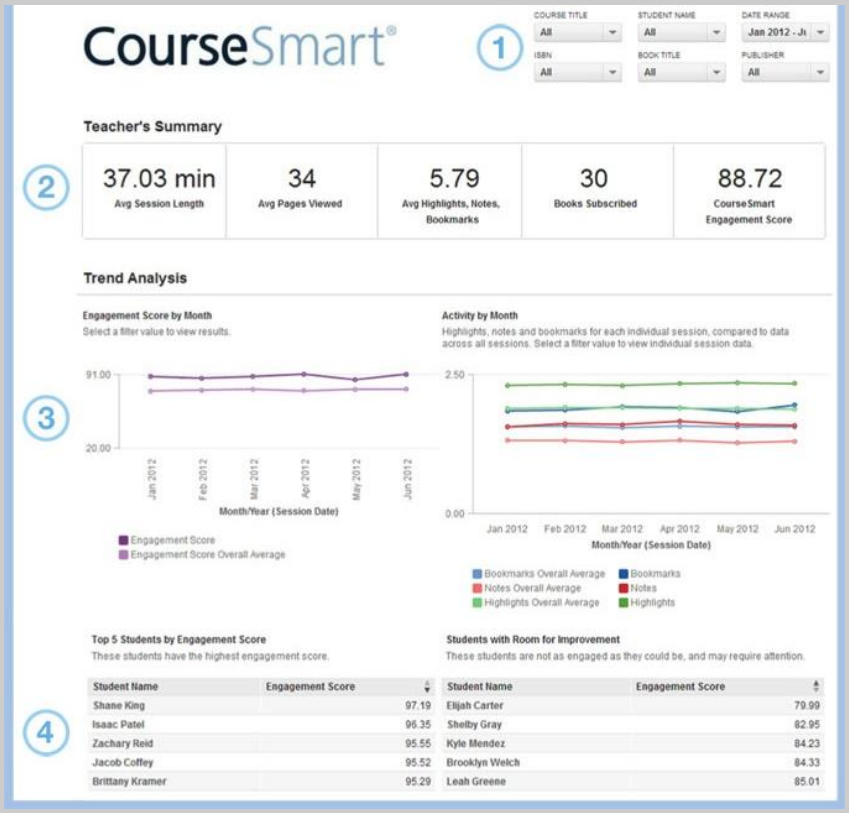


the data gaze and data activism



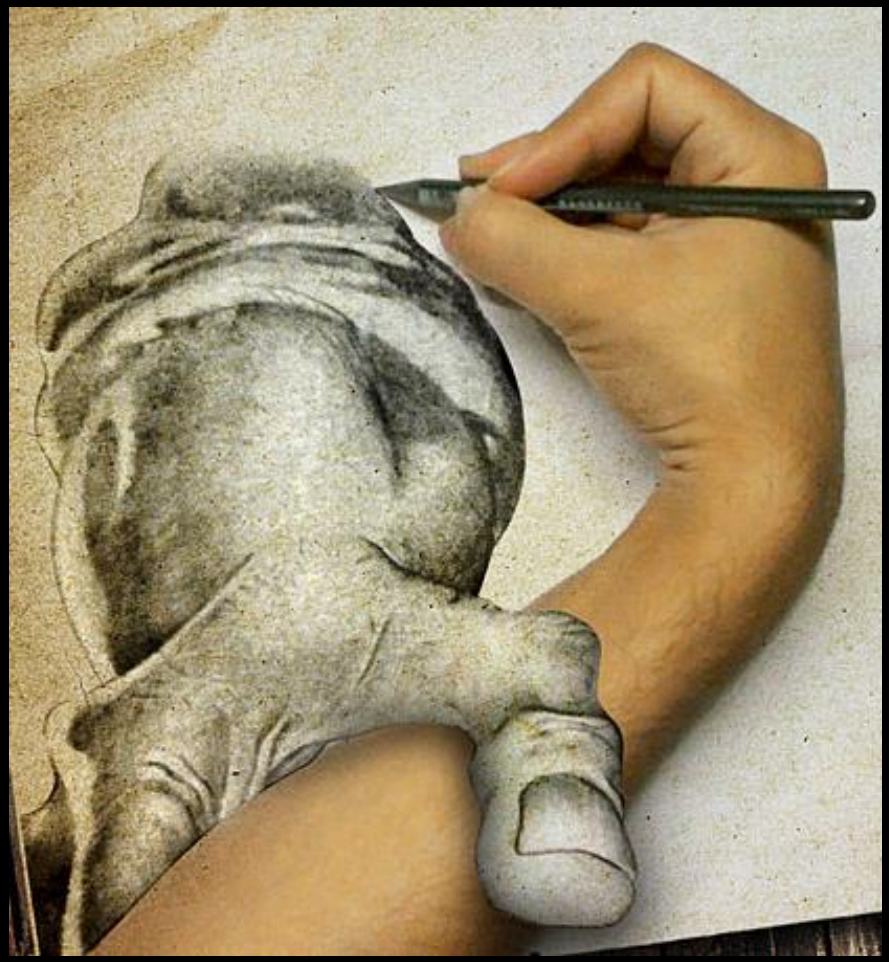


the gaze of learning analytics systems enacted through a mesh of data, multiple software spaces, algorithms, data dashboards, reports, automated "at risk" warnings, digital traces of student presences and absences, and institutional policies and ambitions: human bodies, activities, and lives translated into data points more amenable to the data gaze



proactive data activism: promoting the use of data infrastructures to facilitate innovative alliances, strategies, and action (Gutierrez, 2018; Gutierrez & Milan, 2019); how technology and data itself can be used strategically to advance alternative arrangements and narratives (Kennedy, 2018)

data and people in a co-constitutive relationship of becoming



how working human bodies *become* "in tandem with the erratic, nonhuman temporality of the technological assemblage of which they have become an inseparable part."
Hatfield (2020)

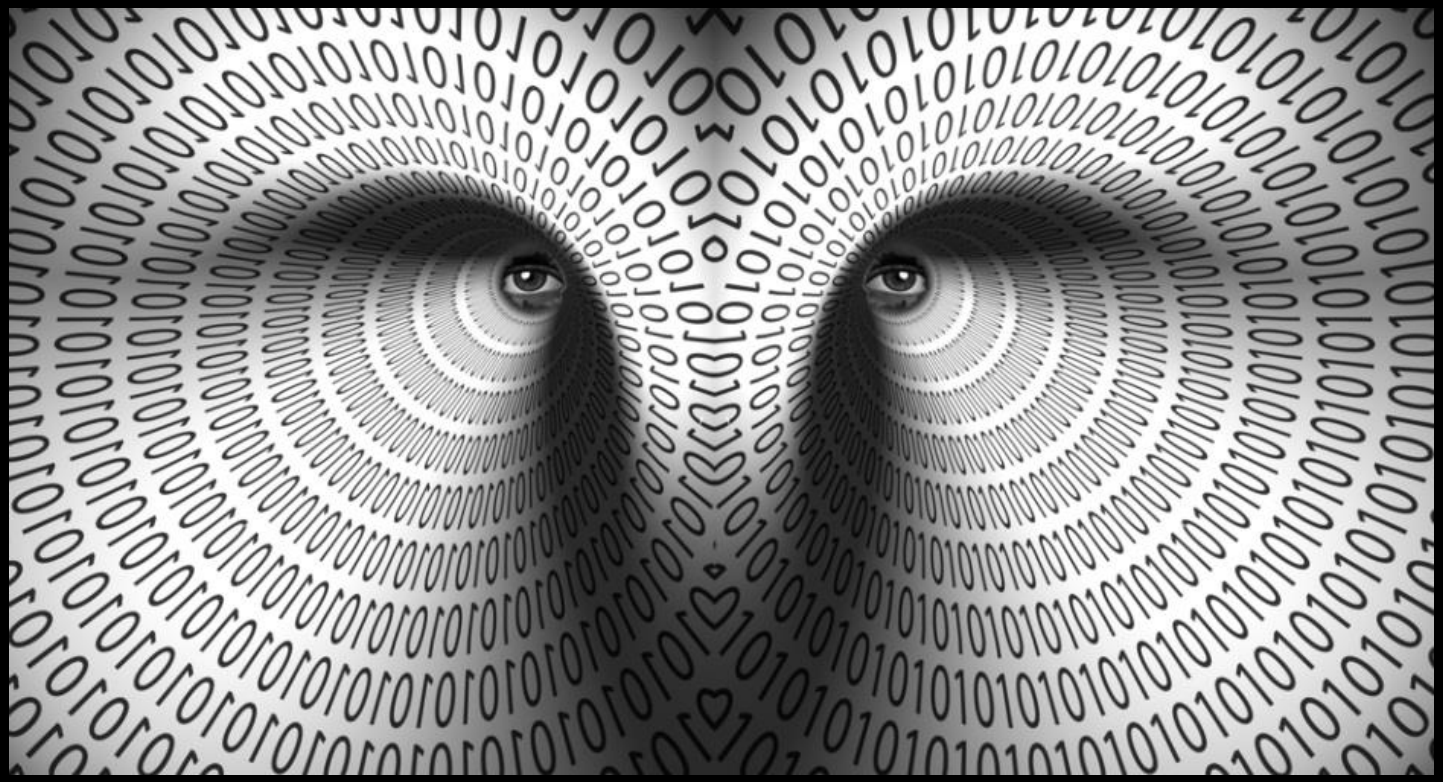
everyday life emerging from continually shifting digital-material configurations
(Pink et al., 2018)

reckon with our intimate relationships with all things

reconsider agency

question presumed neutrality of things

see work-learning practices as distributed across multiple actors and changes to practice as a series of complex social and material (digital) negotiations and relations



posthumanism pushes beyond human-centric notions of being to a more hybrid and humble conception of human actions in the world … re-envisioning the human as intimately entangled and inseparable from technologies, environments, and other species

responding to the data gaze

uncover what algorithms do by attuning to data practices

improvise passages and find ways to make data practices more visible

talk back with data-bodies

uncover what algorithms do by attuning to data practices

- how people interact with digital technologies (such as learning analytics systems) and the data generated with, by, and through, these digital technologies and interactions
- in what ways these interactions are shaping what pedagogy is and does and other aspects of professional work-learning & HE management
- how a particular digital-data assemblage makes some things visible and others invisible
- how it seeks to enroll the user and other actors – digital and otherwise
- how it establishes and normalizes certain rules of conduct and engagement

attuning

- it can start with a simple question: Describe how the object or thing appeared, showed up or was given in a professional practice or in everyday life. What happened? (Adams & Thompson, 2016)

- noticings
  - What do you use these digital/data technologies to do? How do you interact with them? What data do you generate? Where does it go? How does it get "translated" as it moves from place to place? How were these digital/data technologies introduced and what was the rationale? Who owns/created them? What digital/data technologies play out in the background of your everyday work practices? How visible or invisible are they and how much influence do you have?

- explore "algorithmic imaginaries" (Bucher, 2018)
  - Although most of Bucher's participants did not know exactly what an algorithm is, most "had more or less elaborate theories about what algorithms are and ought to be". The way people perceive what an algorithm is and does shapes their orientation toward it. Ask: what are algorithms? what should they be? how do they function in learning analytics systems? what do these imaginings make possible?

improvise passages and find ways to make data practices more visible

By glimpsing attempts of the gaze to contain, categorize, and judge, the machinations of the data gaze become more visible. And present opportunities to re-shape and re-direct the gaze: to generate counter-data narratives, practices, and representations.

In this way, humans do not merely interact with their data in pre-determined ways but rather co-*respond* (e.g., Ingold, 2012) with their data in creative and improvisational modes.

data that is incomplete, inconsistent and broken opens up space for discussion about these differences, maintaining them, rather than resolving them … compare the breakages, then follow what happens after them, and focus on the repair and cleaning

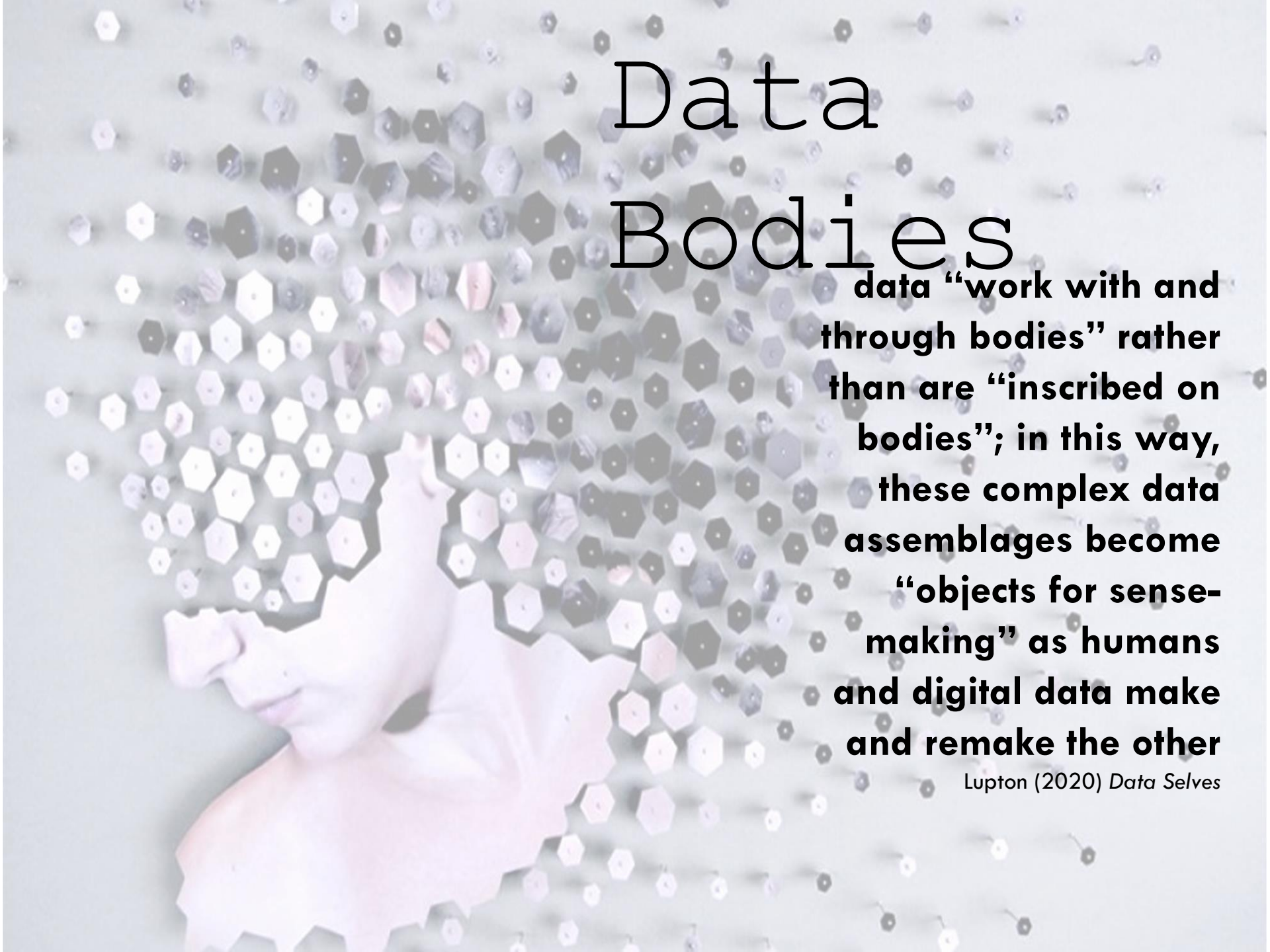
Data Injustices
Broken data?

- women are differently present and absent in data streams depending on geo-political spaces
- better data infrastructures do not fix problems with past and current data in terms of who-what is represented and how
- unrecognized biases in algorithms and algorithmic profiling
- how particular data becomes “attached” to people OR how people “attach” to particular data or data representations

talk back with data-bodies

An integral part of the contractual agreement students have with an institution is sharing of their data. The kinds of data that could be collected with, on, and about students now includes data that might not have considered part of the original contract. This also applies to staff.

Re-conceptualizing the notion of data-bodies (plural and hyphenated). Data-bodies are not separate from human bodies: each enacts the other, are multiple, and "manyfolded" (aka Mol, 1999).



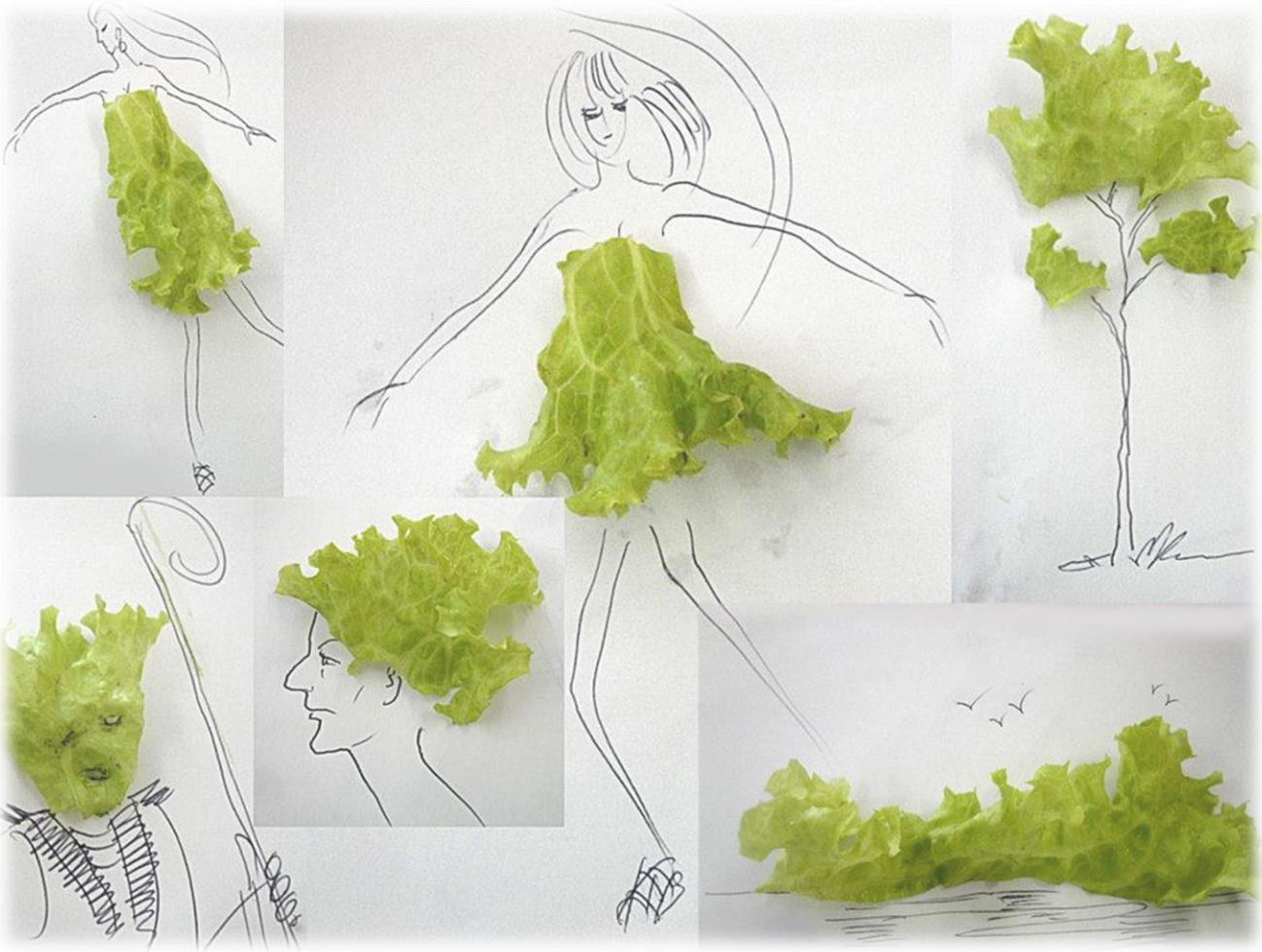
Data Bodies

data "work with and through bodies" rather than are "inscribed on bodies"; in this way, these complex data assemblages become "objects for sense-making" as humans and digital data make and remake the other

Lupton (2020) *Data Selves*

Data-bodies are at best partial representations and constructions.

But as materialisations and extensions these sorts of data assemblages invite different thinking about the relationship



OUR DATA BODIES

RECLAIMING OUR DATA

INTERIM REPORT | DETROIT

Oculus 7 (Andrew Ginzel) | CC BY-NC-SA-2.0

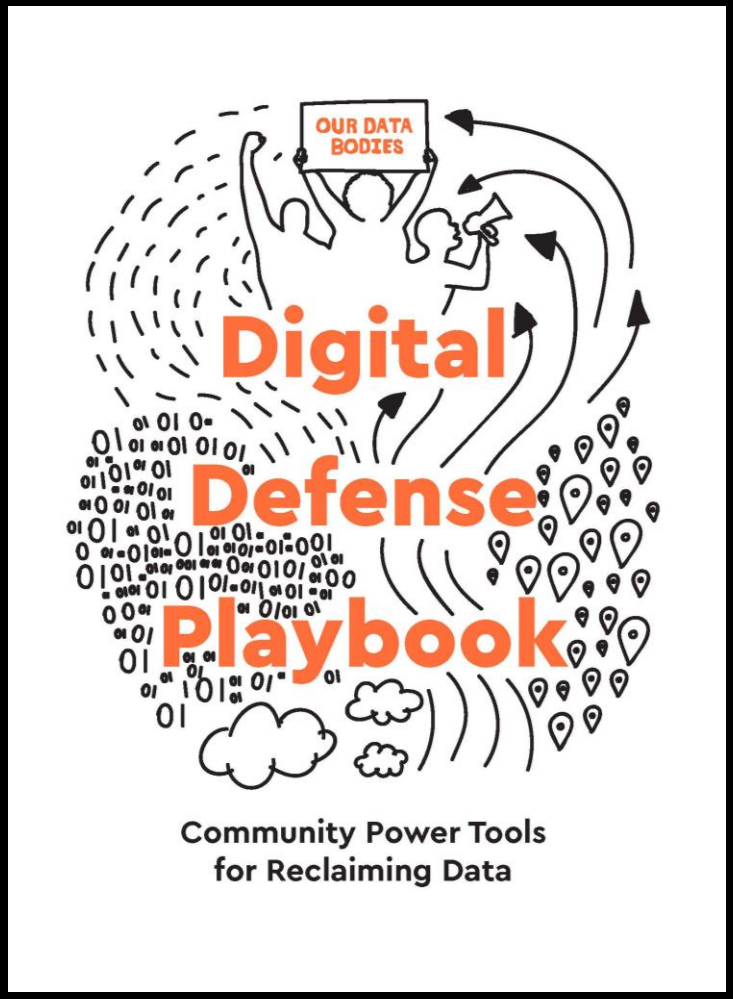
https://www.odbproject.org/

re-entry data (from prison back to the community) / search for employment

one's "data trail"— of your decisions, resources, and interactions with government / foreclosures, evictions, and utility shutoffs

data and digital surveillance / the experience of finding shelter and navigating the criminalization of homelessness and poverty

Detroit, Los Angeles & Charlotte



Purposeful strategies both *re-shaped* the data gaze (keeping track of how they are tracked and setting the record straight) and *re-directed* it (obscuring and blocking data trails and expungement).

Consistent with Hughes (1999), not only was the gaze made visible, strategies were innovated with participants to return the data gaze: resistance was enacted as refusal "to be seen as one is supposed to be seen by the eye of power [and instead] to return the gaze".

data activism in action: preliminary insights

Entry Premise: Data does not float independently of everyday practices. Ongoing reckoning with data must always be "in relation to how this data is situated in everyday environments, with other things and processes" (Pink et al., 2017, p. 3).

Starting Point: One aim is to gain awareness of the many data practices in play in an educational context as well as bring data gaps and hyper-visibilities to light and to look for broken data and data controversies. Start with the everyday data that the people you are talking with are interested in. Samson et al. (2019 *About Data About Us (ODI & RSA)*) explain:

> *People are not naive or ignorant about data. We all understand – to a greater or lesser degree – its impact, role, and importance. Give people the chance to talk and they will engage in ways that will bring meaningful insight into the development of future rights, responsibilities, regulations, policies, and products.*

Resources:

The *Digital Defence Playbook*, produced by the ODB project: rich resource for popular education activities that can be used in multiple contexts

Eubanks (2019): Think about an experience you've had where a digital tool used "big" data to predict something about you or made a decision that impacted your life. How did that make you feel? And what was your response? How does being seen-or not seen-by these systems impact our lives?

Tania Bucher's work with algorithms (which can be adapted to inform thinking around the data gaze): What situations draw data and people (and algorithms) together? In what situations do people become aware of data? How do they experience and make sense of this data and algorithmic manipulations, given its often hidden and invisible nature?

The highly visual approach of Lupi and Posavec (2016) (http://www.dear-data.com/theproject). Their *Dear Data* postcards demonstrate a sort of distributed data agency in the quotidian decisions of what data to collect data and how to gather, represent, interpret, share and make it meaningful.

Reflection: The data assemblages encountered served as objects for sense-making. They applied these insights to questions around datafication in a work context:

- what would you like to better know about the data you generate, work with, or works on you in the course of doing educational work?
- what political and ethical questions does this initial foray into datafication raise for you?
- how might you respond to and return the data gaze in critical, innovative, and generative ways? Where are the opportunities for data activism?

These approaches started to *life-size* data and bring it closer. They helped to ‘rematerialize data, to make it into something one can touch, feel, own, give, share and spend time with’,

Wernimont, 2019

initial insights: accountability & responsibility

I agree with your comment around our duty to provoke, disrupt and examine systems of power. Knox (2017) discusses that the accountability often falls to the educators, regardless of their understanding of the system or its lack of transparency, and raises a question I had not thought about before: is it possible to "decline to use the results of data analytics in educational decision making, and to resist being accountable for such a choice?". (P5)

A lot of the data systems we have in school are all centred around creating chains of accountability. … I'm starting to see how … perhaps much of what we are trying to extract at school level is directly impacted by the numeric and rigid way the SQA or Scottish Government present their data visualisations. When I first came across the idea in the readings … that there is an issue with viewing data visualisations as objective truth, the penny dropped. I'm starting to realise that perhaps I don't 'hate data' … I just hate the way we *do* data at the moment! (P1)

I have pondered whether there is enough of a debate around the ethics of pupil data gathering and whether this issue could be spotlighted to provoke discussion. … Given the current educational climate, I found the idea that we live in a "risk society where managerial technologies have been invented to minimise risk" (Agostino et al., 2019) very interesting, especially when extracting large amounts of data often generates more questions. I again, have experienced this in my professional life, where educators seek the comfort of knowing the problem, but are left with the discomfort of how to answer it. (P3)

initial insights: data activism

Teachers often find themselves at the input and output of data streams, but rarely involved in the process. … greater need for proactive data activism … and that teachers have a responsibility to question how the data is processed and not to wait to react to criticism that may occur at the output. (P5)

think[ing] a lot about gatekeeping and who is responsible for designing data collection systems and indeed the data visualisations at the end. … I feel a sense of responsibility around this. I think in the past I have thought of data either as being a snapshot of 'what is happening' … or as something churned out by a system where people have made certain decisions based on what they're trying to see. … I am now definitely feeling my eyes are being opened to the complexity of the systematic issues at play here. (P1)

I have been fascinated by my reading on data activism however I struggle to see the contributions that I can make as a classroom teacher other than hoping to inform my pupils on digital and data practices. My readings on data activism are making me consider my career goals in order to proactively contribute to data activism. (P2)

I thought there was scope in the idea put forward in the Burnett & Merchant (2020) presentation around teachers finding new ways to make data – both collection and analysis – a task which allows professionals to reflect on their own practice. To me, this seemed like a much more appropriate, manageable and useful way of making use of data in a meaningful way as well as being a step in the right direction for challenging the accountability data culture which seems to dominate education at the moment! (P1)

initial insights: visibility & trust

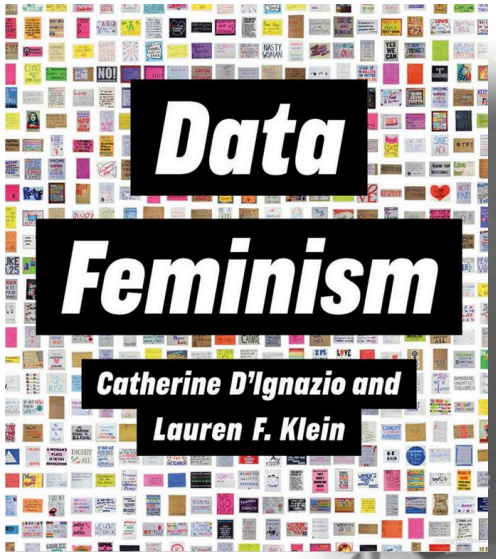
Several issues identified …

- access and security of data [which] highlighted misunderstandings around who has access to particular data and reflecting on who has the control around what can be accessed (P5)

- 'missing data' … provoke frustration amongst teachers and pupils. The Excel spreadsheet that does not account for work ethic or extenuating circumstance, to aspirational target grades, with no opportunity to provide justification for decisions, until of course confronted by management or parents. These black and white pictures often hold people to account to their professional decisions but may not provide a clear image of what the user would like to 'say'. (P5)

- is data always being used as intended / promoted? surveillance of teachers as well as students? This was coupled with lack of understanding and knowledge around some of the software that generates pupil data. Similar to Brown (2020) who reports that instructors were "stymied by a lack of clarity on how data was assembled and imbued with meaning, which limited their own sensemaking regarding the data". And in our data, building trust as well as confidence in professional judgements vis a vis the data systems

At the moment, pupils appear readily to share their information, but if they too start to recognise it is a commodity, shall they be so keen? Onuoha's (2018) concept of the Missing Data Set was interesting … professionals such as teachers also have the power to obscure or hide information for their own agenda. The idea that groups may start to deliberately make no response as a form of protection, was interesting. We wondered that if data does come to be universally recognised as a commodity, how will that affect the collection and sharing of it in a public sector space such as a school? (P3)



We are at a point where “those of us who use data in our work must alter some of our most basic assumptions and imagine new starting points” (D’Ignazio & Klein, 2020). So how do we engage critically and productively with the performativity of the data gaze?

data from below

Chenou and Cepeda-Másmela (2019): creation of a National Index of Male Violence in Argentina. Collaborative partnerships between grassroots activists, social science researchers, and data science experts to work with “big enough data” and “data from below”.

Lehtiniemi and Ruckenstein (2019): moving beyond the “API of me” (e.g., “talking … about ‘our’ instead of ‘my’ data”) to create new infrastructure models that acknowledge that data is both individual and collective and demands collective responsibilities for ethical and inclusive data practices.

image: Practical Action: Technology Justice

The political project at hand and new starting point: HE students, workers, and leaders re-shape, re-direct, and re-story the data gaze. Perhaps engaging as data activists, re-embodying data-bodies to address missing data, bias, exploitation, and the limits of institutional categorization, surveillance, and algorithmic determinism.

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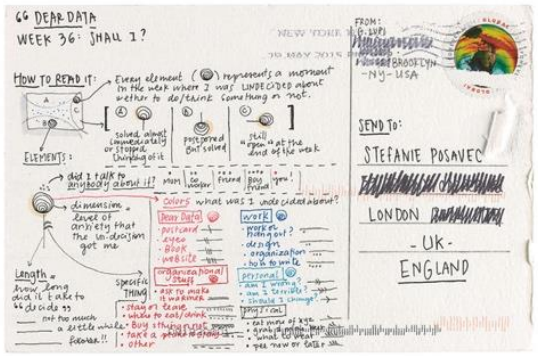
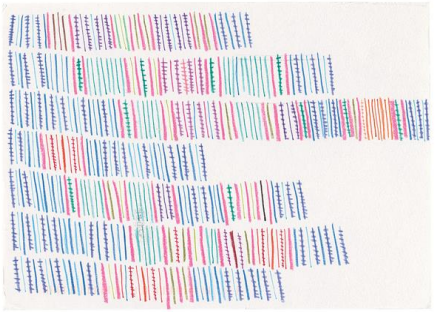
DiSC: Digital Society & Culture

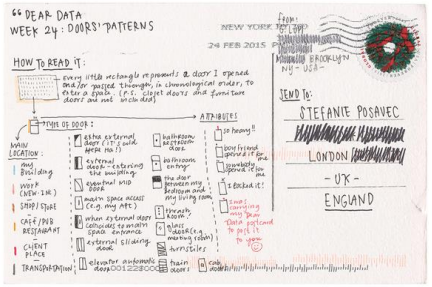
Lupi & Posavec (2016)

http://www.dear-data.com/theproject

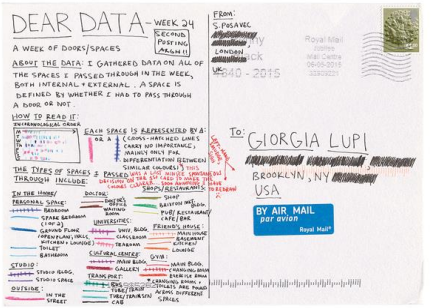


Giorgia realized that when she was undecided she felt better if she told someone. So she added that data as further information.



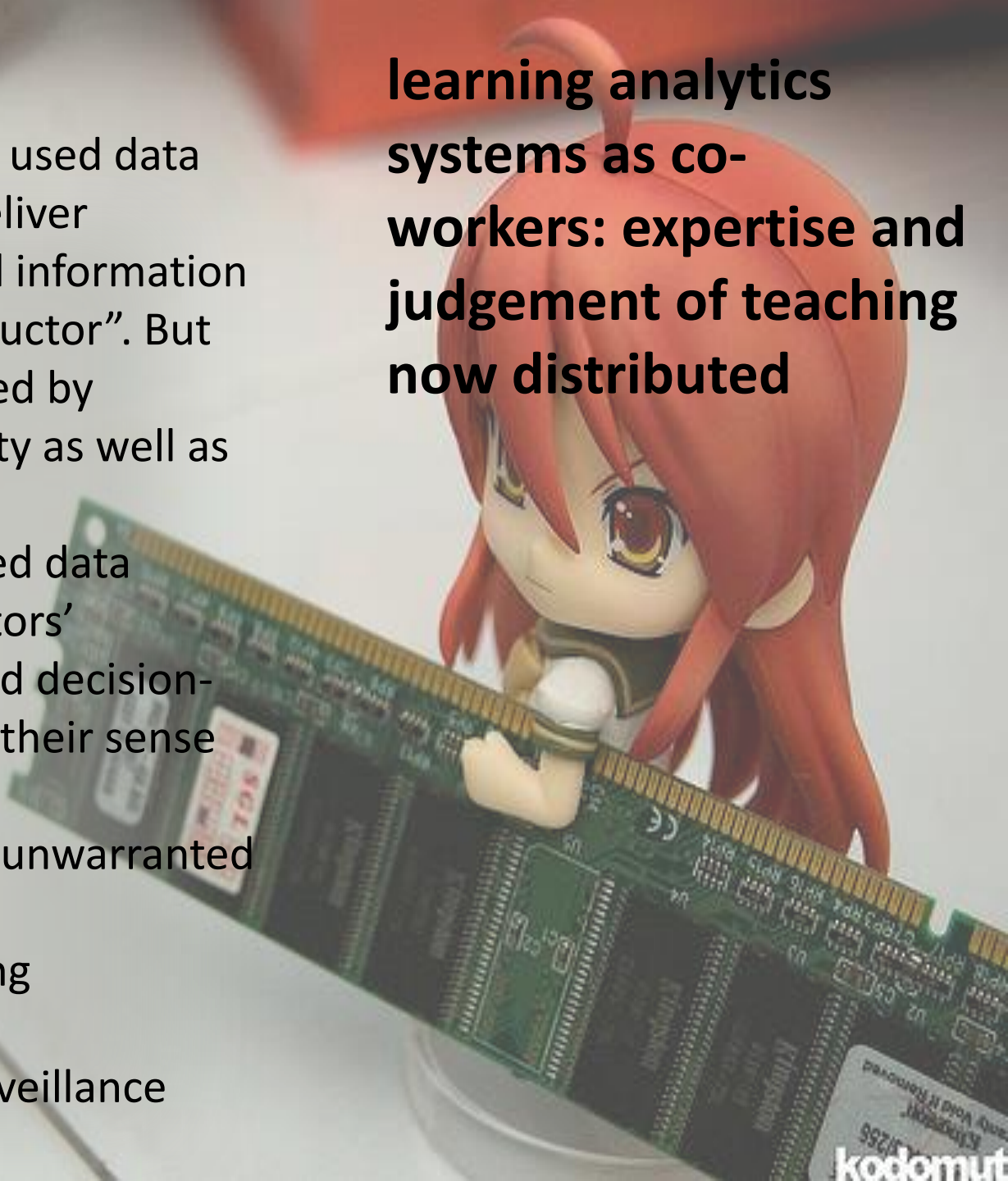


After spending more than six hours drawing this hyper-detailed card, Giorgia texted Stefanie as she posted it: "You need to know that if this one doesn't get to you I won't redraw it. You'll see what I mean."



Unfortunately, while Giorgia's postcard arrived, Stefanie's postcard didn't, so she had to draw hers again (luckily it wasn't as detailed, but it was still supremely annoying).

learning analytics systems as co-workers: expertise and judgement of teaching now distributed

HE physics instructors who used data dashboards designed to deliver "algorithmically assembled information about students to the instructor". But LA systems can be employed by institutions to surveil faculty as well as students:

- the dashboards facilitated data collection about instructors' pedagogical planning and decision-making that threatened their sense of autonomy
- opened for the door for unwarranted interference
- undermined their existing pedagogical strategies
- enabled unwelcome surveillance (Brown, 2020)