Working Paper 6

What a power-with looks like and why we should choose it

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This paper is one of six working papers. The other papers can be found at:
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Abstract

This paper starts the project of elucidating what a power-with looks like at a systematic long-term level and why it is preferable to a power-over. At an episodic, one-off level a power-over—that is, hoarding power and value—appears more profitable. However, the dynamic changes over the long term. Maximising our capacity to act (i.e. power) is inherently collective; enhancing our capacity to act requires combining with other things (e.g. people, objects, ideas). With human collaborators, future rounds of collaboration and value creation are jeopardised by past hoarding. Power and value hoarding erode reputation, trust, effective feedback, and partners' capacity, limit innovation and resilience, and induce resistance and withdrawal from the partnership. In contrast, where value is shared (i.e. a power-with) collaborators reinvest, and more value is created, a virtuous cycle.

In this paper, alongside a simpler model demonstrating virtuous and vicious cycles of value creation or destruction, I demonstrate more complex systemic forms of power-with that I label 'collective experimentation' and 'collaborative competition'. Collective experiments leverage diversity and, through experimentation, create new capacities (i.e. power) and resilience to change. They mitigate the groups' risk of failure from experiments by sharing value from successes. Data is used as feedback from experiments rather than to judge and control. Facilitated by governing agents with protections against corruption and value hoarding, the capacities of all are enhanced, leading to collective flourishing. Real-world case studies will be provided and linked to theory to illustrate the applicability of these ideas to governments' use of data.

Keywords

Power, power-with, power-over, value, value creation, collaboration, competition

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In the previous three papers in this series, I argued that value is the enhanced capacity to act (i.e. power) we seek from all social arrangements. Together we can achieve outcomes that we cannot achieve alone. However, the value or enhanced capacity created in partnership can be hoarded (i.e. a power-over) or shared (i.e. a power-with). At an episodic level—that is, within a single round of value production—taking all the value for yourself can be more profitable; value hoarding and power-over appear superior to value sharing. This paper moves from this episodic, short-term level to the systemic long-term effects of value hoarding and sharing. Across multiple rounds of value production, the dynamic changes as future collaborations and value creation are potentially undermined by past episodes of value hoarding. If the goal of coming together socially is to maximise our capacity to act—to flourish—I argue that value sharing or power-with is more likely to lead to collective and individual value creation and flourishing in the long-term. At this level, value sharing and power-with become normatively superior to value hoarding and power-over.

This paper seeks to answer the questions 'What does power-with look like?' and 'Why should we choose it?' My practical context-specific goal is to provide guidance to public servants responsible for delivering value from data; the problem space for my research project. I will provide real-world case studies illustrating how virtuous cycles of value creation work and the features critical to their function. I will supplement these case studies with common arguments and patterns from theory regarding collaborative power and value creation.

The work is tentative. It draws insights from scholars of power theory, public administration theory, organisational studies, economics, and philosophy and my practice in using data to govern. Though with the resources of one person, such investigations are inevitably cursory. The study of collaborative action and governing has a long and broad base. Future work would benefit from collaboration to investigate these issues more deeply, across wider bodies of work, other philosophical and cultural traditions, within a greater suite of contexts, and in practice. The examples and case studies in this paper were selected to be illustrative and exploratory rather than diagnostic, and my conclusions are tentative rather than definitive. The work is still in the phase of developing rather than testing theory.

In the first of two parts of this paper, I begin by providing a basic model of a systemic power-with illustrated by the process of data and insight production. It seeks to demonstrate in theory and practice that where all participants obtain value, a virtuous cycle of value creation is produced, and the data assemblage stabilises. Where participants do not obtain value, they may withdraw their contribution or resist participation, and the assemblage becomes unstable, potentially creating a vicious cycle of value erosion. I will use real-world examples to demonstrate how a lack of value creation and resistance can lead to an assemblage failing to launch, slowly eroding, or dramatically disintegrating. Indicators of value extraction and resistance will be provided; assemblage architects ignore them at their peril.

In the second part of this paper, I outline more complicated versions of a systemic power-with that I label either a 'collective experiment' or 'collaborative competition' (these subtypes are similar though with slightly different dynamics). Experimentation leverages the diverse capacities of all participants to create novel contextually specific solutions to shared problems, i.e. new capacities to act or value. In collective experiments the risk of experiment failure is mitigated by sharing knowledge of what did

and did not work across experiment sites. This knowledge is the enhanced capacity to act or value created. By sharing it the process meets my definition of a power-with. In a collaborative competition, a level playing field is required to ensure that a loss in one round of competition does not bias future rounds. A biased competition reduces the competition's capacity to create value by impeding innovation and the stability of the system as participants are undermined and become demotivated, withdraw, or resist the lack of value sharing. Where there is a level playing field, each team has an equal chance of winning and across enough rounds of competition all teams will achieve the same number of wins; value is shared and therefore the system is a power-with.

In collective experiments and collaborative competitions, power and value may need to be concentrated in the short-term in governing agents (to create and maintain the enabling structure and procedural fairness) or in prizes (to stimulate competition). Vigilance is required to ensure these concentrations are not corrupted and become a power-over.

In summary, the key features I identify of a systemic power-with are procedural fairness to ensure a level playing field and the dispersal of value, leveraging diversity in competitive context-sensitive experiments informed by data as feedback, and concentrations of value in the short-term in rewards and governing agents with vigilance to protect against their corruption. These features combine to maximise our individual and collective capacities to act and flourish over the long-term in a dynamic and complex world.

In contrast, while sustained systems of power-over do exist—such as in authoritarian regimes—it is difficult to see how they would maximise capacity to act. Power-over and hoarding of value does increase an agents' or group of agents' power in the short-term and may attract followers as a sign of strength and competitiveness. However, as value is not shared with all, the dominant's position must be maintained by deception or coercion. Resistance, poor feedback, lack of innovation, and failure to use and invest in the full capacities of the broader group are likely to undermine value creation in dynamic and complex problem spaces. Logically, a power-over that undermines value creation would struggle to compete with an arrangement in which value creation is maximised by combining the capacities of all participants in virtuous cycles of investment and experimentation. Or if a power-over does succeed, the group that remains must collaborate or disintegrate.

Part 1: A basic model of power-with consisting of virtuous cycles of value creation

This part outlines a basic model of a systemic power-with, the concepts of virtuous cycles of value creation and vicious cycles of value erosion, and the role of resistance in the latter. This basic model of a power-with or the collective process of value creation is illustrated by the concept of the data and insight production process (see Fussell 2022 and Figure 1 below). In large government data assemblages (examples provided later in this section), numerous agents contribute to the production and use of data and data insights. Data subjects—for example, citizens, non-government service providers, and businesses—contribute data. Large institutions—such as statistical agencies, government departments, or universities—collect, transfer, manage, store, and secure that data. They might engage private companies to provide information technology infrastructure such as data management hardware and software. Data analysts—for example from government agencies, academia, and the private sector—contribute analytic expertise and effort. Domain experts—such as

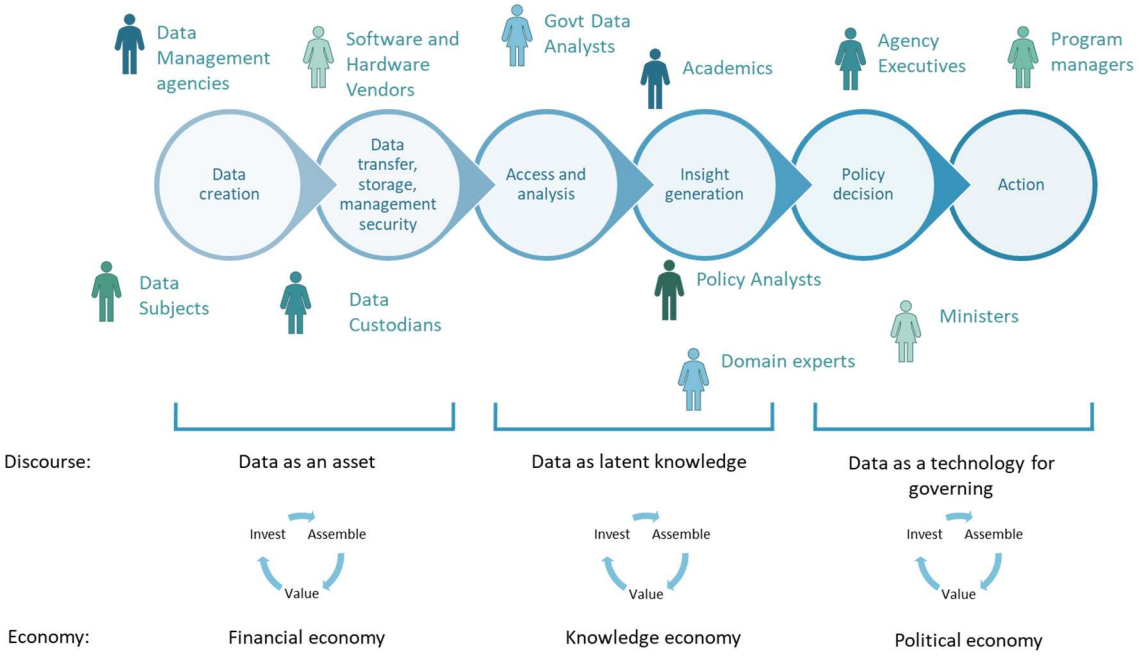
policy and program managers and data subjects—provide context-relevant questions, interpret data insights, and potentially use those insights to take informed action. Government executives provide broad policy guidance and authority, and invest financial and other resources.

Each agent contributes or invests something (e.g. data, infrastructure, knowledge, expertise, effort, resources, authority) to the data assemblage. I propose that those contributions are contingent on each agent also obtaining value from the assemblage. Agents contribute or invest their existing capacities (M stage of desiring-production as set out in Fussell, 2023a, 2023b) in the assemblage (C stage) to the extent that it enhances their capacity to act, i.e. creates new value (M' stage) (see Figure 2).

Depending on their context and the incentives and constraints within that context, different agents obtain value on different and numerous terms; they participate in various diverse economies. The capacity to act of those who build and maintain the data infrastructure is enhanced by financial investment; a financial economy. The capacity to act of an academic undertaking data analysis may be increased by the production of publications that attract citations; a knowledge economy. Data subjects (e.g. citizens) seek information and government policies and services that improve their lives. The continued capacity to act of elected government executives requires data subjects' approval and re-election; a political economy.[3] These economies align with the data discourses and social forms outlined in Fussell (2022) respectively; data as an asset (capitalist social form), data as latent knowledge (territorial social form), and data as a technology for governing (statist social form). Each of these economies or markets is a collaborative competition, a form of value creation set out in the next section of this paper. They socially construct rules, constraints, incentives, and interests and are invested with and shape desire as set out in Fussell (2023a). Understanding these socially constructed motivations and constraints helps to understand how value might be created for different participants. Where these motivations and constraints are in conflict they may need to be tweaked, or new economies developed.

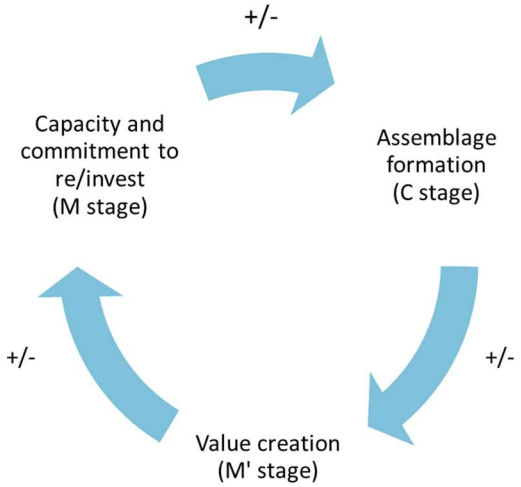
[3] Note this is a simplified description; in reality agents might draw value from multiple economies. For instance, numerous actors obtain a wage as part of their participation and therefore also engage in the financial economy.

Figure 1. Data and insight production process



Rather than the data assemblage existing to create value purely for specific principals—that is, citizens or their elected representatives—value in this model must be delivered to all participants. This is because contributions are required from all participants for the assemblage to function; remove one cog in the assemblage, and it ceases production. In this broad model of a power-with, if agents obtain value, they maintain their investment and a virtuous cycle ensues of investment, assemblage formation, value creation, and reinvestment (see Figure 2). Conversely, if they do not obtain value, they are likely to withdraw their contribution. This creates a vicious cycle of value erosion or an abrupt halt to production if a complete contribution is removed such as access to the data or political authority. Furthermore, if agents' capacity to act is diminished (i.e. they are disempowered, equivalent to value extraction) by the data assemblage they may actively resist participation. However, this is subject to their being aware of their participation and the flows of value, and having the means to withdraw and resist. For example, in the early days of social media, users were generally not aware of the extent of data collection and how it was being used to shape their behaviour through for example advertising and content feed algorithms (Zuboff, 2019, p. 13-9). Even with this increased knowledge, the embeddedness of these technologies within society, a sense of resignation and futility amongst users in their ability to avoid privacy abuses (Draper and Turow, 2019, p. 1824-5), and the lack of alternative services, provide little means to opt-out (Mazzucato, 2018, p. 219; Sadowski, 2019, p. 8; Zuboff, 2019, p. 24-5). This has led to efforts to regulate such technologies to ensure they support user and society goals.

Figure 2. Virtuous and vicious cycles of value creation



Case studies

An illustration of the basic model of a data assemblage is the long-established practice in Australia and New Zealand of creating large linked research data assets using government or academia generated administrative and survey data (though this approach is not limited to these countries, for example see Harron et al., 2017, p. 2, and Holman et al., 2008, p. 767). Examples include the nearly thirty-year-old West Australian Data Linkage System, New Zealand's decade-old Integrated Data Infrastructure, the Australian Bureau of Statistics' Multi-Agency Data Integration Project and Business Longitudinal Analysis Data Environment, New South Wales' Human Services Dataset, the Sax Institutes' 45 and Up Study, and a network of linkage units at the national and state level (45 and Up Study Collaborators, 2008; Australian Government Department of the Prime Minister and Cabinet, 2021, p. 46-51; Young and Flack, 2018, p. 584-5). Hosted by data integrating authorities on behalf of data custodians,[4] generally these assemblages involve the establishment of a data integration 'spine' or 'master linkage key' that provides the correspondence between records across a broad range of data sets often across policy domains (Australian Bureau of Statistics, 2022; Australian Government Department of the Prime Minister and Cabinet, 2021, p. 49; Blake et al., 2022; Harron et al., 2017, p. 2). Trusted users apply for the creation and access to a linked subset of data relevant to their research project, which is often hosted in secure virtual data laboratories (Australian Government Department of the Prime Minister and Cabinet, 2021; Parker, 2017, p. 479; Sax Institute, 2020). The stability and value-creating capacity of this model are demonstrated by its longevity, lack of controversy, and its replication across jurisdictions and policy domains, as demonstrated by the West Australia's Data Linkage System case study as set out below.

[4] Increasingly at the national level in Australia under accreditation arrangements; see Australian Government Department of the Prime Minister and Cabinet, 2021, p. 49.

Initiated in 1995, West Australia's Data Linkage System (WADLS) is one of Australia's longest standing examples of a large linked research data system (Holman et al., 1999, 2008). The system centres primarily on a master linkage key hosted by the Data Linkage Branch in the WA Department of Health and staffed with academics, providing 'ownership to both sectors' (Eitelhuber and Davis, 2014, p. 1; Holman et al., 2008, p. 768). Initially, the master linkage key was used to assign project specific record identifiers, and request and collate data from data custodians. However, as the number of datasets linked through the system increased (well over 30 in 2014), a centralised content data repository was created to automate and streamline content data collation before it was provided to researchers either in aggregate form, as a deidentified dataset, or hosted in a secure research facility (Eitelhuber and Davis, 2014, p. 1-2).

Holman et al. (2008) attribute the WALDS's successful initiation to the raised profiles of academics from local large-scale epidemiological projects fostering community trust, an injection of infrastructure funding from the Lotteries Commission overcoming financial barriers, the movement of senior personnel between government and academic sectors creating a sense of community, the physical co-location of infrastructure and data which overcame privacy concerns, and computing advancements (p. 768).

Value was created for a broad range of participants; 'Open access and a commitment to translation of research results into policy, practice and public education outcomes engendered participation' from senior clinicians, consumer advocates, and researchers (Holman et al., 2008, p. 768). The range of beneficiaries was expanded with the later broadening of the system beyond its initial health focus which also diversified the source of infrastructure funding (Holman et al., 2008, p. 771). That said the system was inexpensive (i.e. AU$3.7m over its first 10 years) relative to the value created which included improvements in data quality, supporting the local research economy, reducing research costs, protecting patient privacy, strengthening community engagement, contributing to scientific knowledge, and population health improvements (Holman et al., 2008, p. 773-5). Engagement with the community was common, including media describing these research outcomes and explaining the potential of new linkages (Holman et al., 2008, p. 768-9). Its social, scientific, economic, and security track record articulated in letters from consumer groups, clinicians, and researchers led to a successful bid for additional government funding 10 years from initiation (Holman et al., 2008, p. 771).

The increase in data linkage systems in Anglophone countries including Australia supports Holman et al.'s (2008) prediction that 'such systems will become the norm in countries like Australian in the next decade' (p. 775). However as Holman et al. (2008) noted at the time when 'national systems of linked health and welfare data' were uncommon

> *'Successful implementation demands high level of community capital and inter-agency cooperation before the many diverse stakeholders will relinquish their immediate interests in favour of a more futuristic and public-spirited common vision' (p. 767).*

Many of the elements highlighted in the West Australian case study are echoed in the slightly different case of Estonia's e-government infrastructure; the latter an oft celebrated example internationally (Drechsler, 2018, p. 2; Kattel and Mergel, 2019, p. 143-4). Common elements between the cases include the emphasis on leadership, public support, cross-sectorial cooperation, a dedicated core

group, low-cost solutions, and an overarching interoperable platform combined with decentralised databases (Holman et al., 2008; Kattel and Mergel, 2019). That said, the purpose of these examples is not to draw generalisable conclusions regarding necessary conditions for success. I include the Estonian example as, like the West Australian example, it demonstrates that when the broad suite of contributors to an assemblage—for example, politicians, academics, citizens, corporations—obtain value the assemblage stabilises and is replicated.

Rather than scientific and policy research, Estonia's X-Road data infrastructure provides secure data exchange between a group of organisations (e-Estonia Briefing Centre, n.d.). It creates a distributed (rather than centralised) network of information systems that is able to 'write to multiple systems, transmit large datasets and perform searches across several information systems simultaneously' (e-Estonia Briefing Centre, n.d.). An X-Road ecosystem of organisations is hosted by an X-Road operator who controls who can join, 'defines regulations and practices that the ecosystem must follow' and oversees the X-Road software (Nordic Institute for Interoperability Solutions, 2020). Multiple ecosystems can be connected in a federation if they are sufficiently compatible, such as Estonia and Finland's cross-border linkage of their X-Road systems (e-Estonia Briefing Centre, n.d.; Nordic Institute for Interoperability Solutions, 2020). The various applications include for example single registration of citizen information (the 'tell us once' principle), electronic communication and workflow in the justice system, electronic health records, and digital identification; in Estonia 'it possible to digitally sign any contract, access essentially any public service, order prescriptions, file taxes, vote, and so forth' (Kattel and Mergel, 2019, p. 143).

Some of the features of Estonia's digital agenda highlighted by Kattel and Mergel (2019) include foci on open, new, adaptable and low-cost technology rather than investing in large, expensive, vendor-built, and legacy systems, upskilling citizens in IT, centralised universal public digital architecture and strategy with decentralised ministry-level databases and implementation, and policy risk-taking and experimentation in part due to political naivety (p. 146-50, 152).

Similar to the West Australian example, Estonia's digital agenda has had widespread support (Kattel and Mergel, 2019, p. 145), however with more complex—including symbolic—drivers. Established in the early 1990s after Estonia gained its independence from the Soviet Union, digital progress became 'a symbol for leaving its Soviet' and heavy industry past behind.[5] It became 'part of Estonia's official image and branding' and led to the successful export of its data infrastructure to over 20 other countries in Europe, South America, and Asia (Guadagnoli, 2021; Kattel and Mergel, 2019, p. 145, 157). Additionally, Drechsler (2018) speculates that the fairy tale of Estonia as a world leading digital society increases knowledge, alliances, and potential defence of the tiny country that has a long history of being 'colonized from all directions' (p. 6, 11, 14).[6]

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[5] Environmental and ethnic tensions from immigration due to investments in heavy industry and mining were critical to Estonia's independence movement (Kattel and Mergel, 2019). Digital technology was an opportunity to move away from these industries and engage Western countries (Kattel and Mergel, 2019).

[6] The extent to which Estonia's digital strategy is also a defence strategy is reflected in its recent move to store state information in clouds in commercial servers and Estonian embassies such that 'if Estonia is conquered,

Like the West Australian example, cross-sectorial collaboration has been key to the establishment of Estonia's digital infrastructure. Though this collaboration has been generally 'ad hoc and informal' with no documented foundation strategy, lead office, or office holder (Kattel and Mergel, 2019, p. 145). There was minimal 'institutionalization or formalization', with key rules set by principle, not law (Kattel and Mergel, 2019, p. 154). Rather, 'multiple policy initiatives…*[and]* various overlapping and mostly self-managed public-private networks provided the informal dynamic capacity and capability for change', alongside vital early academic input (Kattel and Mergel, 2019, p. 145, 148-9). There was a high degree of fluidity in movement between public, private, academic, non-profit sectors and network ties took 'on a regulatory function…*[where]* failing to fall in line with what is decided…can lead to exclusion from the network' (Kattel and Mergel, 2019, p. 153-4). While 'highly unusual in…Estonian political and bureaucratic culture' where government and private sector collaborations were usually treated with suspicion, the approach 'remained relatively scandal-free…with little evidence of corruption, influence, or accountability issues' (Kattel and Mergel, 2019, p. 150-1).

However, large government data assemblages following this basic model do not always go so well. For instance, the UK government's care.gov health data research repository noted in Fussell (2023c), is an example of a data assemblage that failed to launch due to the loss of political authority following public backlash over its intended use for commercial purposes and the potential for value extraction (Boseley, 2016; Goldacre, 2014; Vezyridis and Timmons, 2017). Alongside this example of an assemblage that failed to launch, data assemblages can also be slow to establish, slowly erode, become transformed, or dramatically disintegrate. Roland and Guthrie's (2016) analysis of the UK's Quality and Outcomes Framework—a pay-for-performance scheme targeting general practitioners—provides an example of both a transformed and a disbanded data assemblage. The scheme was 'radically reshaped in England' (Iacobucci, 2018) likely as a result of its unpopularity with clinicians due reductions in payments, the administrative burden, high work stress, the drift in focus towards managerial rather than clinician priorities, and distortions of clinical care (Roland and Guthrie, 2016, p. 2); the assemblage was resisted by clinicians as it undermined their capacity to act. While the scheme was reshaped in England, it was abandoned in Scotland in preference for a more bottom-up, local approach of collaborative 'GP clusters' that valued professionalism (Huang et al., 2021, p. 2021). Roland and Guthrie (2016) argue that 'Winning hearts and minds through persuasion, collaboration, and close alignment of professional and managerial agendas is at least as important as the more technical elements' (p. 3); the assemblage needed to deliver value to all.

Resistance

I propose that understanding the flows of value within an assemblage is critical to ensuring its success and avoiding its destabilisation. In particular, data assemblage architects should seek to understand resistance as a force that—in terms of Deleuze and Guattari's assemblage theory—deterritorialises (see Fussell, 2023b). Data assemblage architects ignore resistance at their peril. As Hollander and Einwohner (2004) note, while the concept of resistance is often vague and contested, there is a 'virtual

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it can continue to exist…"the first country in the world that can exist without physical land"' (Drechsler, 2018, p. 6, 13).

consensus that resistance involves oppositional action of some kind' (p. 538-9) and often, though not always, it is seen as an opposition to the exercise of dominating power (p. 548, 550). I propose that more specifically resistance is a reaction to the flow of value, a bid for a great share of value. In this next section, I will argue that resistance within an assemblage can arise from any of its contributors, I will elucidate the indicators of value extraction and resistance, and how to distinguish legitimate from illegitimate forms of resistance, i.e. bids for a greater share of value.

Where a data assemblage does not create value for its participants, they may passively withdraw their contribution or actively resist the assemblage. Any type of contributor can be a point of resistance (see Hollander and Einwohner's 2004 finding that the least powerful are not the only source of resistance, p. 536). There is no shortage of examples of individual citizen or customer data subjects resisting data assemblages that do not provide them with value. These include First Nations Peoples seeking data sovereignty (Walter et al., 2021) and not providing their Indigenous status in data collections—essentially resisting data supply—where they feel the data use is potentially discriminating and not in their interests (Australian Bureau of Statistics 2012, p. 11). Other examples include citizen census boycotts and cancellations (Kitchin and Lauriault 2014, p. 9); students resisting algorithmic grading (Jones and Safak, 2020); welfare recipients and advocates resisting automated debt collection based on data matching (Whiteford, 2020); and in the commercial sphere consumers reducing their digital footprint or purposefully inputting misleading data (Vincent et al., 2021), or taking their business and data to providers with more acceptable terms (Doffman, 2021; Vincent et al., 2021).

Resistance is not limited to citizens or customers. As argued in Fussell (2022), data is a technology for governing—that is, the shaping of self, others, materials, and environments—and it is not just the subjects from whom data is collected that are governed and may resist. Multiple parties may be governed by the same datasets depending on the level of aggregation, from service providers (such a doctors, hospitals, schools), to governance regions (such as school or health districts), and state or national governments. Governments can be governed with data at a program, regional, or jurisdiction level through attempts to shape the behaviour of government agents. Where this disempowers those agents, where they do not obtain value, they may withdraw their contribution to the assemblage and resist.

However, resistance can be misinterpreted as stubbornness, ignorance, or greed rather than potentially a reaction to disempowerment and value extraction. Within the domain of public policy data assemblages, a common non-citizen point of resistance is from data custodians (Allard et al., 2018; Fusi, 2021). I propose that a government policy and program manager or agency may resist a program's data being released to academics, a central government agency, another jurisdiction, etc, to avoid their program being governed by others and disempowering them. To claim this is automatically a cultural legacy of risk aversion, about fiefdoms, avoids accountability, or is political misses a deeper complexity (also see Allard et al. 2018, p. 245 regarding the potential for researchers to misread 'state agency approval of data sharing requests to be idiosyncratic and political'). Alongside the potential for criticism and embarrassment, data custodians might also fear the misinterpretation, misuse, or intentional data abuse from third party data access (Productivity Commission, 2017, p. 140-2; van Panhuis et al., 2014, p. 4-5). Allard et al (2018) found that productive engagement with policy and program staff begins when the data is used to support their engagement with executive

government and to inform their own practice (p. 247-8), that is, where it enhances their capacity to act.

That said, if resistance is a response to the flow of value and a bid for a fairer share, what's to distinguish it from resistance that seeks an unfair share of the value? That is, greed, rent-seeking, and value extraction or illegitimate resistance that seeks to hoard value. As Hollander and Einwohner, 2004) note, 'What one observer (or participant) sees as resistance, another may see as accommodation or even domination' (p. 548). The difference is best understood at a systemic level and in the context of the following section regarding collective experiments and collaborative competitions. To effectively create long-term value, collective experiments and collaborative competitions require the redistribution of value and a level playing field at the start of each round of competition. Rent-seekers aim to gain an unfair advantage, and do not reinvest and share the value created amongst the group undermining value creation (Mazzucato, 2018, p. 4-5); they seek a systemic power-over rather than a power-with.

To ensure a data assemblage's implementation and stabilisation, its architects need to be sensitive to signs that value extraction is occurring, including resistance. Signs that value extraction might be occurring include the presence of illusions of transcendence (see Fussell, 2023b) implying that rules are immutably fixed, and where rewards and punishment are required to ensure compliance. At the broadest level, those obtaining value from an assemblage would not need to be coerced, they would be committed to the assemblage.

Given that committing to an assemblage to jointly create value requires trust that your collaborators will share rather than extract value, distrust and dissatisfaction are also possible indicators of value extraction. As value equates to empowerment, a lack of empowerment within the assemblage may be indicated by anger, sadness, or disengagement. In data assemblages where a participant cannot withdraw their contribution, they may attempt to resist through delay, limit data provision, or provide flawed data. In contrast, commitment, loyalty, trust, satisfaction, and joy may indicate value creation. In a data assemblage, this might materially appear as an investment in data quality and the voluntary sharing of data and knowledge (as demonstrated by the Palliative Care Outcomes Collaboration case study in the next section).

While emotions are useful indicators, caution must be exercised in using emotion as an indicator of empowerment and value creation since emotions are socially constructed and therefore too can take both legitimate and illegitimate forms and can be faked; affect is a better indicator though difficult to measure and therefore emotion provides an imperfect proxy. According to Massumi (1987) in his translators' notes for *A Thousand Plateaus*, 'affect' for Deleuze and Guattari does not denote 'a personal feeling…*[rather]* an ability to affect and be affected. It is a prepersonal intensity…implying an augmentation or diminution in that body's capacity to act' (p. xvi; also see Ruddick, 2010, p. 27); affect is a visceral pre-social unlabelled intensity. For Spinoza enhancing our capacity to act is motivated by the desire to produce joy; 'We organise encounters to maximise joy…Spinoza argues for the necessity of joy…in the formation of what we might call emancipatory assemblages' (Ruddick, 2010, p. 22, 30). However for Spinoza, emotions are social constructions that can be based on adequate or inadequate ideas; the latter is defined by illusions of transcendence such as feelings shaped by concepts of good

and evil (Ruddick, 2010, p. 27-30, 35). The inverse of joy, is perhaps Deleuze's concept of 'the scream' which emerges in a 'cramped space' of disharmony under 'unbearable' forces posing a 'problem at the level of sensation' and marking the possibility for something new (Ruddick, 2010, p. 37-8). In summary, the affective indicator of a value-creating emancipatory assemblage is joy and an indicator of a value-extracting disempowering assemblages 'the scream'.

In Part 2 of this paper, I discuss further the role of assemblage architects or governors in establishing the arrangements that direct the flow of value and their need to be aware of these indicators that value sharing is not occurring. I leave that discussion to Part 2 as that part describes a more complex model of systemic power-with in which power may be concentrated in the short-term in system governors to enable long-term value creation.

Insights from theory

The concept of virtuous cycles of empowerment and value creation leading to stability that permeates this section is supported by the work of power theorists. This includes Spinoza's ethics (see Fussell, 2023b), Haugaard's (2015, p. 150-1) thinking on normatively positive exercises of power, and Follett's (1924, p. 53-77) concept of the 'circular response'. For Spinoza, a virtuous act or combination depends on whether our capacity to act is enhanced; a vicious act or combination is where it does not (Adkins, 2015, p. 96-7, 161; Smith, 2011, p. 124-5).

For Haugaard (2021) the stability of democratic processes depends on whether they distribute power to all, not just the already powerful (p. 159). Electoral systems that ensure combatants have an equal chance of winning future contests fosters a 'virtuous circle' of structural stability and trust (Haugaard, 2015, p. 150). While a perfectly balanced system is theoretical only as 'there are no perfect democracies or systems with incorruptible state functionaries…the closer a system approximates to the ideal type, the more likely it is to survive as a system—a virtuous cycle' (Haugaard, 2015, p. 150-1). Resistance, in contrast, 'reduces efficiency. Coercion is the means to overcome that resistance but creates friction by undermining trust, thus a vicious cycle is created' (Haugaard, 2015, p. 150).

As set out in Fussell (2023a), Follett's concept of the circular response is the 'dynamic and ongoing reciprocal creation of situations and actors as they act and react to each other' which she uses to explain how 'resistance and dysfunction might be brought on by a manager by their own behaviour'. With regard to system stability she notes that 'Only integration really stabilizes. But by stabilization I do not mean anything stationary. Nothing ever stays put' (Follett, 1941, p. 35). For Follett (1941) integration is solving conflict by bringing the diverse expertise and capabilities to solve common practical problems, and jointly developing and sharing power through this cooperation (Melé and Rosanas, 2003, p. 38-42). In summary, for Follett power-with is a dynamic circular process that is maintained (i.e. stabilised) where power is jointly developed and shared.

Outside of power theory, in the analysis of collective action problems—a subset of game theory common in economics—Ostrom (2010) argues that by positing 'that individuals can use reciprocity and reputations to build trust…one can begin to explain *both* successful and unsuccessful efforts to overcome' collective action problems (p. 156; emphasis in original). Reciprocity, trust, and reputation are 'at the core of an evolving theoretical explanation of…collective action' and these factors when

present are 'positively reinforcing' and create collective value, and when absent are negatively reinforcing and 'can generate a downward cascade leading to little or no cooperation' (Ostrom, 2010, p. 162-3). Ostrom argues that individuals learn that reciprocity and 'contingent action' or responding to sharing with sharing and hoarding with hoarding 'leads one to be better off' (Ostrom, 2010, p. 161).

> *'When some individuals initiate cooperation in a repeated situation, others learn to trust them and are more willing to adopt reciprocity themselves leading to higher levels of cooperation. And, when more individuals use reciprocity, gaining a reputation for being trustworthy is a good investment as well as an intrinsic value' (Ostrom, 2010, p. 162).*

That is, cooperation creates value and begets more cooperation in a virtuous cycle.

Thinking about the flows of value and power, and likely points of resistance becomes a diagnostic tool. It can be used to understand why the desired participation in and use of a data assemblage are not occurring, anticipate and recognise resistance and work to address it, and design data assemblages that are more likely to deliver value. The next part also illustrates how value and power may need to be concentrated in the short-term in governing agents or as prizes to motivate collaboration and innovation. Value might not be obtained by all parties immediately, but instead over multiple rounds of competition or experimentation. This procedural or systemic fairness and sharing of value has been shown to increase trust and happiness. I will also argue that value sharing is more effective at creating value than value hoarding, at least in the context governments' use of data to govern.

Part 2: A more complex model of a power-with, the 'collaborative competition'

In a dynamic complex world characterised by variation over time and space, what worked yesterday might not work tomorrow, and what worked here may not work there. Leveraging Deleuze and Guattari's assemblage theory (see Fussell, 2023b, 2023c), I propose that maximising capacity to act requires ongoing experimentation. New context-specific capacities to act and value emerge out of combining diverse things in novel ways. Yet experiments often fail consuming valuable capacities and resources. The risk of experiment failure can be mitigated by collaboratively experimenting in tandem and sharing the value, e.g. knowledge. This is the rationale for collective context-specific experimentation in a dynamic complex world (as opposed to traditional scientific experimentation applicable to closed uniform and stable situations seeking timeless universal solutions).

Quality Improvement Collaboratives (QIC) are the best example of a more complex form of a value-creating data assemblage[7]—the collective experiment—that I have identified to date from my practice environment. Quality Improvement Collaboratives are widely used in health services in high-income countries and increasingly in low- and medium-income countries (Zamboni et al., 2020, p. 2).

The QIC process is typified by the Australian Government Department of Health and Aged Care funded Palliative Care Outcomes Collaboration (PCOC). Through PCOC, the University of Wollongong supports

[7] This example describes the value or new capacities created in the form of knowledge; a knowledge economy. Though its interaction with economic and political economies could also be explored.

palliative care service improvement across Australia (Eagar et al., 2010, p. 187; University of Wollongong Australia, 2022). Within PCOC, metrics are designed that are meaningful to patients, their carers, and clinicians (Currow et al., 2015, p. 307; Eagar et al., 2010, p. 190). Each palliative care service independently implements their own service improvements in the areas these metrics measure (Currow et al., 2015, p. 308). Metric data is collected and collated by the University, and the services are benchmarked (Currow et al., 2015, p. 307). Data is provide to services every six months with services collaborating closely with the support of Quality Improvement Facilitators and at times through benchmarking workshops to review their performance and share the strategies they used to attempt to enhance their performance (Currow et al., 2015, p. 308; Eagar et al., 2010, p. 188-90). Shared quantitative and qualitative knowledge is used by services in combination with their local knowledge and contextual requirements to 'refine models of care' (Currow et al., 2015, p. 308).[8] Unless they self -identify, each service's performance is kept confidential; only they know how they performed and how they compare to their peers (Currow et al., 2015, p. 308). Only deidentified data is reported nationally (Eagar et al., 2010, p. 188). Participation in the program is entirely voluntary (Eagar et al., 2010, p. 187, 190). Even so, participation rates are high, covering over 80 per cent of patients nationally through over 180 services (University of Wollongong Australia, 2022). Over more than 15 years of operation, the program has produced sustained improvements in palliative care (Blanchard et al., 2022; University of Wollongong Australia, 2022). Adapted from a similar model for rehabilitation units, the PCOC model has been replicated internationally, including in Ireland and Taiwan (University of Wollongong Australia, 2022).[9]

I propose that in a collective experiment rounds of experimentation using agents' diverse capabilities drive the creation of innovative strategies to solve common problems in contextually relevant ways. Data provides feedback regarding success and value is shared in the form of capacity building. The integrity of the process is maintained by agreed rules and procedures administered by governing agents. In the PCOC example, the value created is the knowledge shared between participants when they come together collectively to discuss their performance improvement strategies. Eagar et al. (2010) highlight the importance of using the data to provide timely feedback to make data collection useful and meaningful to service providers which has been 'critical in recruiting services to PCOC and in meeting their ongoing needs'; 'Too often in Australia, clinicians are asked to collect and submit data without ever receiving anything back' (p. 192). Additionally, services are also trained in how the data

[8] In their studies of inter-organisational public service networks, Hartley and Benington (2006) found that in the 'transfer of learning' '"replication" rarely takes place' rather 'new practices have to be adapted to a new context', with social interaction between services also providing 'catalysts for accelerating existing plans for change, either by mobilizing and reinforcing the required political and managerial commitment, or because knowledge sharing generates enthusiasm and confidence' (p. 104-5).

[9] High participation rates and the longevity of QICs are not guaranteed. While successful in achieving significant clinical outcomes, the now defunct Australian Primary Care Collaboratives—also funded by the Australian Government Department of Health and Aged Care—was plagued by low (20%) uptake. Cited barriers included ambivalence to quality improvement, the rigidity of the process, perceived threat to autonomy from data sharing, lack of technical capacity to collect and store data, time pressures, decreased funding to support agencies, and concerns about the high cost of such programs and their cost effectiveness (Brown et al., 2014; Knight et al., 2022, p. 438).

can be used to support their practice such as in case conferencing, team meetings, and patient-handovers (Eagar et al., 2010). The same pattern of central coordination with decentralised implementation and experimentation also mirrors the structures highlighted in the West Australian and Estonian examples in the previous section of interoperable universal data exchanges supporting dispersed data usage.

In the PCOC approach, palliative care services as individual agents are only directly accountable to themselves and—through measures relevant to their patients—their clients. Though as a group—in partnership with the University of Wollongong—they can demonstrate performance improvement to funders and broader society. The University can demonstrate the value of its contribution via the increasing performance of the group and the increasing and sustained participation of services (Blanchard et al., 2022); given the program is voluntary, services would only join if PCOC was valuable to them.

Another example of using data as feedback to inform learning and collective action through collective experimentation is Australian governments' use of data during the Covid pandemic. This example demonstrates that the collective experimentation model is not restricted by scale. It can work at different units of analysis, from the service level (and below) to large jurisdictions and even across nation-states; throughout the Covid pandemic I expect that nations were watching and learning from each other's 'experiments' in pandemic management.

Like many governments worldwide, Australia's state and federal governments jointly established thresholds to work with the public on virus containment (see for example Department of Health and Social Care, 2020; Government of Ontario, 2020; Prime Minister of Australia, 2020). In Australia, different stages corresponded to a level of viral presence in the community and was assigned a set of actions or restrictions to control viral spread, such as border closures, limiting movements outside of the home and the size of gatherings, the closure of certain types of business and community services such as schools, the wearing of masks, etc. Regions or whole states moved in and out of different stages depending on viral incidence. Data provided the feedback required to determine the success of containment measures. The daily reporting of statistics was prominent in the media and the graphical concept of 'flattening the curve' featured in everyday lexicon. Each region was effectively a localised experiment in viral containment overseen and adapted according to local contexts by state governments from which other jurisdictions could learn.

In general, the public accepted this form of governing by data; they stayed at home. It was accepted even though the impact on citizens was substantial with loss of work (offset by welfare and business payments), an unprecedented shift to mass working and schooling from home, loss of social contact, etc. Trust in Australian governments and the public service increased substantially, at least in part due to the positive assessment of the government's management of the pandemic (Goldfinch et al., 2021). In this circumstance, the government provided data to citizens for self and shared governing of their behaviour; a governing-with. Responsibility was collectively shared, management dynamic and adaptive, and it acknowledged unanticipated and uncontrollable impacts; it was a dynamic and complex environment.

This contrasted to the later Covid vaccine rollout in Australia in which the Australian Government set for itself deadlines by which specific volumes of vaccines would be administered, that is, performance targets (Ting, Scott, and Palmer, 2021). In effect, the government took full responsibility as the agent accountable for the outcome rather than sharing that responsibility and the consequences. When the self-imposed targets were not met due to unforeseen circumstances, a narrative of failure and blame followed and talk of target dates was quickly dropped (Norman, 2021). This was replaced by a shared regulatory model that mirrored that used to monitor virus incidence (Swain, 2021; Zhou and Hurst, 2021). As vaccination rates reached pre-defined thresholds in each state jurisdiction, restrictions were lifted. Responsibility and consequences were again shared between government and citizens; according to Croucher, Australia's Prime Minister said in July 2021 that 'he hopes to be at Phase B before the end of the year—"but that is up to all of us"' (Swain, 2021).

While this bottom-up approach to performance improvement shares some similarities with top-down approaches[10]—the use of common metrics to shape performance—they differ in essential ways that make the former a power-with and value creating and the latter a power-over and value extracting.

A top-down performance regime follows the logic applied in principal-agent theory of individual agents responsible to individual principals (see Fussell 2023d for a discussion of principal-agent theory). A top-down performance management regime seeks to control agents and ensure they deliver in principals' interests; what is valuable to principals takes priority. As Davies et al. (2021) note the intention of performance targets is to 'align the priorities of staff with those of policy makers' and reduce their 'ability…to use their professional judgement'; 'This is a feature, not a bug, of targets' (p. 6). Participation is often mandatory, and agents are judged and must be coerced through rewards and punishments (Martin and Williams, 2019, 43-5). Essentially it is a power-over in which value is hoarded rather than shared; coercion would not be required if agents were obtaining value.

However, as set out in Fussell (2023b, 2023d), in complex dynamic situations requiring collective action, such approaches often backfire. Where in the PCOC example (page 13), risk taking, contextually based experimentation, the use of both qualitative and quantitative information, and collaboration is fostered, the opposite occurs in a top-down performance regime. Rewarding success and punishing failure discourages risk taking, undermines local and professional judgement, prioritises what is measured rather than what matters, and inhibits collaboration and learning (Davies et al., 2021, p. 5-6, 15-8; Martin and Williams, 2019, p. 43-7, 52, 54; Muller, 2019, p. 7). It impedes the process of experimentation, collaboration, knowledge and value sharing essential to collective value creation. Why experiment when failure is punished? Why collaborate and risk others accessing the reward from your hard work? Hartley and Benington (2006) found that in the UK, the greater focus on rewarding performance 'is making knowledge sharing more fraught and more of a risk calculation', potentially undermining concurrent bottom-up approaches (p. 102, 107). It is not surprising that top-down approaches often 'fuel distrust' (Martin and Williams, 2019, p. 56), and are resisted and undermined

[10] See Fussell (2023d) for this bottom-up/top-down distinction.

for example through gaming, including data manipulation (Davies et al., 2021, p. 5, 15, 27; Martin and Williams, 2019, p. 44-5).

Theoretically the difference between the top-down and bottom-up approaches is the same as Deleuze's differentiation between a morality and ethics, as described in Fussell (2023c). A morality defines good and bad in advance and passes judgement accordingly (Smith, 2011, p. 124); as summarised by Hartley and Benington (2006), 'performance targets and league tables impl*[y]* that what constitutes "best practice" is already known and agreed' (p. 102; insert not in original). In contrast, an ethics evaluates relative to whether an arrangement enhances or decreases capacity to act (Smith, 2011, p. 124-5); that is 'value' and value as I have defined as the enhanced capacity to act we seek from all social arrangements (Fussell, 2023b), must be delivered to all participants.

As Martin and Williams (2019) advise, for bottom-up approaches to succeed they must be protected or 'insulated' from the potential desire for governors to convert a bottom-up power-with into a top-down power-over (p. 50). That said, they must deliver value to all participants including governors and the broader citizenry.

Key features of a power-with

A similar model to a collective experiment of a systemic power-with is a what I call a 'collaborative competition'. Team sporting competitions provide a useful analogy of collaborative competition. I find this sporting analogy effective for clearly illustrating some other key features of a power-with beyond the role of context-specific experimentation, data as feedback rather than judgement, and dispersal of value. That is, procedural fairness, a level playing field, leveraging diversity, and the concentration of value in rewards and governing agents.

In the team sporting competition model, collaboration happens at two levels. Firstly, in the agreement and adherence by clubs and teams to the rules of the game. Secondly, competition fosters collaboration between team members, as they compete against other teams.[11] Team members combine their diverse skills to achieve a shared outcome; a team of goalkeepers will not win a game, nor does a group of players who do not work together.

Level playing fields and procedural fairness enable effective experimentation

The success of the sporting competition assemblage in enhancing participants' capacities is dependent on there being a level playing field. Episodically there may only be one winner and value is concentrated in the motivating prize. However, with a level playing field, all teams have the same chance of winning. Statistically this means that across enough rounds of competition all teams will obtain the same number of wins and therefore an equal reward. The value is shared, and, at a systemic level, the assemblage is a power-with.

[11] There is potentially a layering effect here that might be fruitful to explore in future work. That is, competition is sandwiched between layers of collaboration and above or below those layers may be further levels of competition. It could be profitable to explore the effects of whether the top layer of the system is collaborative or competitive on the value-creating capacity of the system, for example, the effects of a functional 'liberal international order' as described by Ikenberry (2018), Mearsheimer (2019), and others.

Ideally, trophies or prizes only provide symbolic rewards. If they provide material rewards that can enhance a team's capacity and chance of success in the next round, the game will become unbalanced with a team becoming dominant; the level playing field is disrupted. That said, while trophies provide symbolic rewards, the real capacity and value gains are created in the form of the enhanced capacities of team members from coaching, practice, and experience, the bonds they build, and innovative strategies induced by the motivation to succeed. Where there is not a reasonable chance of winning, teams potentially become demotivated and frustrated, and the ability of the game to increase their skills and capacities reduced. Dominant teams are not challenged, and their development also stagnates. The dispersal of value across teams and creating a level playing field becomes critical to the continued capacity-building and value creating effect of the game.

Other examples that might arguably follow a pattern of collective experimentation or collaborative competition include experiment-driven research communities, well-functioning markets, and parents or teachers supporting their charges to learn through guided risk-taking, experimentation, and feedback.

Insights from theory and other contexts

To further explore the question for this paper of 'what does a power-with look like and why should we choose it?', I will supplement the findings above from data and sporting assemblages with some from power theory and economics. Haugaard (2015) illustrates a dynamic of rounds of collaborative competition in the form of democratic elections. He too emphasises that a level playing field is critical to the stability of and trust within the system. Using Northern Ireland as an example, he argues that 'electoral systems where majorities take all tend towards instability…these structures do not give the minority real possibilities of power' (p. 150). Instead systems which enable 'permanent minorities into power renders the political system stable' illustrated by the shift to Northern Ireland's 1998 Good Friday Agreement which decreased political violence (Haugaard, 2015, p. 150). 'There is a feedback loop from fairness to stability' as the loser adheres to the rules and concedes defeat knowing in the next round of competition they have an equal chance of winning (Haugaard, 2015, p. 150). Furthermore, when this occurs 'Trust between players increases, thus their willingness to comply with the rules of game. Even when compliance delivers outcomes that run counter to immediate goal-orientated interests' (Haugaard, 2015, p. 150). Trust becomes present even in the midst of structured conflict (Haugaard, 2015, p. 150). This pattern contrasts to an unfair system plagued by resistant, friction, inefficiency, and the need for coercion leading to vicious cycles of eroded trust (Haugaard, 2015, p. 150). Ostrom (2010) too finds that trust and collaboration are reinforcing. Trust that others will reciprocate 'is highly correlated' with an individual's norms and past experience but is also affected by information about others' trustworthiness and the 'risks of extending trust given the structure of a particular situation'; self, other, and structure all play a part (Ostrom, 2010, p. 161).

Haugaard's (2015) observation that agents are willing to concede defeat where the system is fair thereby providing the opportunity for future success is consistent with the concept of 'procedural fairness'; that is, the participation in fair and transparent processes (Talbot, 2011, p. 29). Frey and Stutzer (2001) empirically find procedural fairness increases happiness irrespective of whether an individual's interests are directly satisfied within an episode of deliberation and decision (p. 153-67).

This is consistent with findings from game theory cited by Talbot (2011) who states that 'Individual "players" may not get what they want in any particular "round" of the game, but if they feel the rules (institutions) are operating fairly they will continue to cooperate' (p. 29; also see Ostrom, 2010, p. 161). Talbot (2011) proposes that we are motivated not just by the paradoxically conflicting drives of selfishness and altruism, but also by a desire for procedural fairness (p. 29). He argues that operationalising the idea of public value requires all three (Talbot, 2011, p. 28). Where Talbot (2011) proposes a scorecard approach (p. 31-2), I propose the concept of collaborative competition balances these three drives in practice; collaboration satisfies altruistic drives, competition selfish drives, and—as will be discussed in the next section—procedural fairness is administered by overseeing assemblage architects or governors.

Procedural fairness and the level playing field are not just about ensuring value is shared by dispersing value statistically over the long term through turn-taking, i.e. you win this time, but I might win next time. Procedural fairness and the level playing field also enable value to continue to be created though striving and by supporting multiple sites of experimentation. Systematically (or in Haugaard's terms 'dispositionally') a fair system is positive-sum, value is not just shared, it is created (Haugaard, 2015, p. 150).

In a dynamic and complex world experimentation is key to value creation. Deleuze and Guattari (1987) argue that within a metaphysics that assumes change, adaption to change requires careful experimentation (p. 161; also see Adkins, 2015, p. 150-1, 246-7). Complexity theory assumes the past is no certain guide to the future, the outcomes of our actions cannot be predicted with absolute certainty (Adkins, 2015, p. 151; Carline et al., 2020, p. 108; Holland, 2013, p. 17). There is no guarantee that any one experiment or change will improve things for the better, they could make the situation worse (Adkins, 2015, p. 150-1, 246; Deleuze and Guattari, 1987, p. 161). In the PCOC example, the risk of experimentation is spread across the 180 plus palliative care services. They are each unique sites of experimentation and some of those experiments will work well and some less so. Rather than concentrating the risk through a single experiment or implementation strategy, collective experimentation spreads the risk of experimentation amongst the group. The risk is reduced by the sharing of the outcomes of those experiments such as knowledge—sharing the value—so that all can learn and profit from successful strategies.

Mazzucato (2018) also recognises this dynamic. She states that

> *'Public institutions can reclaim their rightful role as servants of the common good…They must get over the self-fulfilling fear of failure, and realize that experimentation and trial and error (and error and error) are part of the learning process…They can change the discourse. Instead of de-risking projects, there will be risk-sharing—and reward-sharing' (p. 266).*

Dispersing and sharing the value are also important for investing in and maintaining the diverse capacities of the individuals that make up the group. Diversity is required to ensure adaption and resilience to novel challenges where old strategies that were successful in the past may no longer work. The dispersal of value ensures that one agent or strategy does not become dominant by hoarding all the value and wiping out other capacities and strategies leading to the fixation and stagnation of the experiment and competition. That would be analogous to a species becoming so dominant that it

outcompetes all others effectively forming a monoculture. Monocultures however put an ecosystem at risk in that they can be extinguished in their entirety by a novel predator or environmental change, they lack the variation required to adapt.

Not only is diversity required for adaption and resilience, it is also a source of innovation. There is a large body of literature linking diversity to innovation (for example see Karlsson et al., 2021; Liedtka et al., p. 14, 2017; Nathan and Lee, 2013). Every individual is a diverse mix of capabilities and experiences. By combining things and their capabilities in new ways in response to novel situations, new capacities are created that are more than the sum of their parts (Adkins, 2015). This is the source of novelty. Where those new capacities enhance our capacity to react to novel problems in specific contexts, by my definition, value is created.

These ideas of power being created through combining diverse capacities also appear in Anglophone power theory. Haugaard, Parsons, and Follett all argue that there is a not fixed quantity of power over which agents must compete for their share, a zero-sum game; rather power is co-created or positive-sum (Follett, 1924, p. 301-2; Haugaard, 2015, p. 150; Parsons, 1963, p. 232-3). Follett in particular emphasises that is power is created through diverse individuals combining their ideas and experiences to contextually specific problems to produce new capacities. Follett (1918) asserts that rather than a source of conflict or problems, difference should be cherished for its potential to generate solutions (p. 39-41). She states 'socially valuable differences register themselves for the enrichment of all concerned' (Follett, 1924, p. 301). For Follett (1924), diversity is *[life's]* most essential feature…We seek a richly diversified experiences where every difference strengthen and reinforces the other' (Follett, 1924, p. 301-2). Jointly developed power emerges from leveraging difference in conflict relative to context, or in Follett's terms the 'law of the situation' (Follett, 1924, p. xiii, 179-94; Follett, 1941, p. 101, 105-6). Similar to my ideas of collective experiments and collaborative completion, Follett (1941) calls these processes 'constructive conflict' (p. 30-49). 'Thinker after thinker' she states, 'is trying to find some way to get rid of conflict. The political scientists…tell us that facts are the solvent for controversy' (Follett, 1924, p. 300). She states that 'As conflict—difference—is here in the world, as we cannot avoid it, we should, I think, use it. Instead of condemning it, we should set it to work for us' to create 'something new' (Follett, 1941, p. 30, 34-5).

Deleuze and Guattari's metaphysical framing points to not just a diversity of individual capacities but also flexibility in thought and meaning. As noted in Fussell (2023c), they rally against 'illusions of transcendence' or ideas that are presented as universals truths or laws. Instead, ideas, laws, and meaning are socially constructed ideally to create and disperse value. Where those ideas and meanings stop doing so, they should be open to change. Relatedly, Norman and Verganti (2014) contrast incremental innovation or 'hill climbing' typified by continuous iterative cycles of testing and learning (as per my collaborative competition model) with radical innovation; the jump to a completely different hill (p. 78-9, 82). Radical innovation requires a change in technology or meaning (Norman and Verganti, 2014, p. 79-80, 82). Radical innovation is 'surprisingly rare,…most attempts at it fail', they 'seldom live up to their potential when first introduced', 'are often difficult to use, expensive, and limited in capacity' and they 'take considerable time to become accepted' (Norman and Verganti, 2014, p. 83-4). 'Incremental innovations, meanwhile, are necessary to transform the radical idea into a form that is acceptable to the consumers who follow the early adopters' (Norman and Verganti, 2014, p. 84).

'Without radical innovation, incremental innovation reaches its limit. Without incremental innovation, the potential enabled by radical change is not captured' (Norman and Verganti, 2014, p. 84). The concept of radical innovation equates to the concept of 'the event'; a phase change (like water switching from a liquid to gas) and the switch to an alternative mode of organisation of a complex system (Carline et al., 2020, p. 108).

The role and concentration of power in assemblage governors

As the previous section established, collaborative competition can require the concentration of value in the short-term in prizes, but with vigilance or procedural fairness to ensure that such concentrations do not bias future rounds undermining the value creating process. Additionally, as will be set out in this section, in both collective experiments and collaborative competitions the concentration of power in governing agents is also often required to oversee the establishment of the assemblage and maintenance of the rules of the game or fair procedures. Vigilance is also required to ensure that this power or capacity is exercised to create and share value (i.e. a power-with) rather than extract value (i.e. a power-over).

Developing governance arrangements for data assemblages is time-consuming; is it not unusual for governance issues to be a greater challenge than technical hurdles (Wiseman 2020, 21) and take much longer than the data analysis itself (Allard et al. 2018, 246). In the slow and difficult process of designing and implementing value creating assemblages, lead agents or system governors such as public and private sector executives become accountable to assemblage participants for ensuring collective value creation and dispersal, and protecting the assemblage from internal and external value extraction. Consent to being governed—to the endowment of agency in governors, the capacity to act on principals' behalf—and trust in governors depends on it.

Within the assemblage, system governors or architects use a range of material and discursive mechanisms (Deleuze and Guattari's form of content and form of expression of the assemblage – see Fussell, 2022) to fix and channel the flow of value. Within large government data assemblages such as the West Australian and Estonian assemblages described earlier, this includes layers of formal policy, governance, legal, infrastructure, organisational, and financial arrangements, as well as informal social networks and regulatory mechanisms. Assemblage operations can be fixed for example in laws and policies, roles and their incentives and constraints, information technology architecture, terminology, and cultural norms.

Some of these fixation methods—such as laws and expensive one-off purchases of data infrastructure—will be stickier than others. For instance, as the Estonians realised and sought to avoid, large software and hardware purchases can (though not necessarily)[12] create a lock-in effect as they are difficult and expensive to reverse; costs are sunk, analytic staff become proficient in their use and operational systems are built around and become dependent on them. This lock-in ensures continuous

[12] Lakey (2022) and Mollerop (2019) suggest for example 'API-based integration' using containerisation or microservices and a multi-cloud strategy to minimise lock-in effects.

value flow to private vendors of those products and the potential to extract value by increasing prices and assuring future revenue streams.

In the development of data governance arrangements, assemblage architects must use their judgement to determine what should be firmly fixed to provide stability, enable the creation and dispersal of value, and minimise value extraction, and what to leave flexible to enable experimentation and for arrangements to be adapted as circumstances change or processes are found to be ineffective. In the Estonian example, much was left fluid with the system's development primarily guided by principles rather than law, network bonds, and interoperable data sharing architecture (Kattel and Mergel, 2019).

Leveraging theory, assemblages have both elements of statis and change (Adkins, 2015, p. 14); the statist social form of order and the nomadic social form of experimentation and transformation. Follett (1924) makes a similar argument, 'In the life process freedom *[i.e. experimentation and change]* and law *[i.e. rules and stability]* must appear together…Government and industry must express this truth' (p. 193; inserts not in original). Mazzucato (2018) notes that

> *'Adam Smith was of the opinion that markets need to be shaped, contrary to the modern interpretation of his work as "laissez-faire" (leave the market alone), he believed that the right kind of freedom is not the absence of government policy, but freedom from rent extraction' (p. 275).*

My concept of collaborative competition posits that both competition (i.e. experimentation and change) or collaboration (i.e. governance and stability) are required for effective value creation.

While the concentration of power in assemblage governors is critical to effective collaboration, it can be corrupted and therefore vigilance and systemic defences are required to ensure that governing capacity is used to create and share rather than extract value. Having a capacity to act (i.e. power) is not normatively positive nor negative. It is only in the exercise of power that we choose whether to share (power-with and normative positive) or hoard value (power-over and normatively negative). As noted by Haugaard (2012, 2015), positive and negative forms of power operate through the same processes. 'What is normatively desirable always has within it the potential for domination' (Haugaard, 2015, p. 157). We must always be vigilant to ensure these processes have not become corrupted, or in Haugaard's (2012) terms, parasitised by domination (p. 33). This includes governing agents choosing carefully each time they employ the power endowed upon them by assemblage participants or make when making decisions about what to fix and what to leave fluid within an a policy, program, or data assemblage.

Defences against value extraction can be put in place, though via lack of vigilance they can be eroded. Common systemic defences against value extraction include process transparency, making space for and responding to critique, protest, and resistance, legal and moral protections for the vulnerable, and material and technological barriers and guides such as security systems and mechanisms that make desired behaviour easy and undesirable behaviour difficult.

Conclusion: Summary of what a power-with look like and why it creates more value

In summary, systemic value creation or power-with involves the combination and coordination of diverse contributions from a range of actors that, in turn, each obtain value from their collective efforts that they could not obtain alone. Investment in the assemblage is maintained, providing capacity for further value creation; a virtuous cycle.

Procedural fairness and data as feedback become important for effective experimentation or structured competition where participants combine their diverse capacities to create novel, context specific capacities, i.e. value. This engenders trust and stability as participants who know they have a chance of future success concede to an episodic loss and the maintenance of the system. Furthermore, their capacity may be built simply through participation in the social bonds and the new skills, the capacity that comes through striving, or the sharing of value amongst all collaborators in the form of shared knowledge (such as with the PCOC and Covid examples). Rewards while providing motivation, cannot bias future rounds of competition. When each round of competition starts with a level playing field, loss is only temporary, and learnings and value will be shared, the risk in each individual competition (or experiment)—as each is one of many—is abated. By leveraging diversity, including by reinvesting in diverse capacities through sharing the value, the potential for innovation through experimentation is enhanced. Through diversity and an openness to adjusting strategy and meaning, the potential for adaption and resilience to change is maximised; collective capacity to act and flourishing in a dynamic and complex world is enhanced.

Data is used as feedback from experiments for learning rather than judgement. Failure becomes a valuable learning experience rather than a cause for judgement and punishment. The sharing of information is an essential part of the process, to a point; some level of anonymity and securing of information may be necessary to prevent shaming and value extraction. Participation is voluntary, and coercion is unnecessary as all participants obtain value. Resistance, rather than needing to be quashed, becomes important feedback that hoarding of value might be occurring.

Power is invested in system governors to facilitate this collaborative value creation and dispersal by overseeing the assemblage and procedural fairness; trust in their authority is conditional upon their facilitating collective value creation. The role of the powerful is to use that power to support the group to create and disperse value. Points of material and discursive fixation or structure are put in place by governors and participants to channel the flow of value. Some points of fixation need to be sticker than others depending on how important they are for protecting from value extraction and the likelihood that they will need to be adapted if they become ineffective at supporting value creation. The assemblage includes both elements of stasis and change, and individuals motivated by both altruism and selfishness.

Empirical observations from non-market contexts demonstrate that groups regularly self-organise to obtain shared goals (Ostrom, 2000, p. 137-8, 2010, p. 155). However, establishing and maintaining a power-with is clearly challenging; there is ample of evidence that power-over arrangements are also common. At the level of national governments and the more extreme end, Geddes et al. (2018) highlight throughout history autocracy has predominated and ‘Dictatorships still rule roughly 40

percent of the world's nations' (p. 1); though those that tend to be less dire for citizen welfare are a blend of a power-over and power-with (p. 226-8).

While both power-with and power-over appear to co-exist in tension, I tentatively propose that a systemic power-with leads to greater long-term, collective flourishing in complex situations. As I have demonstrated throughout this paper, a power-over erodes reputation and trust limiting the potential for future collaborations, the source of power enhancement. Power-over undermines the capacity of some contributors by not sharing value and investing in their capacities or, through standardisation, minimising diversity and limiting participants' scope to use their full capacities such as their contextual experience and judgement. Experimentation and risk taking—the source of new capabilities and value—are discouraged as standardisation is prioritised and failure punished. I hypothesise that in a power-over where coercion is used, feedback which is important for learning and adaption may be limited by fear of punishment, or as noted in the case of top-down performance regimes may be manipulated and gamed. When externally motivated by rewards and punishment, effective communication and collaboration may also be limited between teams not wanting to give their competitors an advantage. Resistance and withdrawal from an assemblage that does not deliver value to its contributors undermines its ability to create value, potentially creating a vicious cycle of value erosion.

Within government data assemblages, it appears that sharing the value creates more individual and collective value than value hoarding, though further case study analysis and testing in practice is required. More broadly, it is an open question whether a power-over can effectively compete with a power-with, one in which all participants' capacities are fully leveraged by to create value through collaboration and experimentation. The role of stable and dynamic environments is likely to be influential in how they evolve. At the very least, a power-over is unethical and illegitimate as within it those who claim to govern to create collective value on behalf of the governed exploit those within their jurisdiction.

To support my finding regarding to data assemblages that value sharing is required to most effectively create value, numerous scholars support the argument that value extraction (Mazzucato) or power-over (Follett and Parsons) impede system effectiveness. Mazzucato (2018) reasons that when rents (i.e. unearned income or value extraction) 'get confused with profits…inequality rises, and investment in the real economy falls' (p. xviii), value extraction 'siphon*[s]* wealth away from national economies' (p. 5-6; insert not in original).

Melé and Rosanas (2003) argue that Follett's concept of the 'circular response' echoes

> *'Hegel's account of the of the master slave relationship in being both dynamic and one in which power-over proves ultimately empty—just as a master-slave relationship in business produces resistance and dysfunction' (p. 40).*

Follett reflects on how a manager 'giving orders from a position of power-over' (Melé and Rosanas, 2003, p. 41) demanding 'a blind obedience may have it react on himself' by the worker 'deliberately carr*[ying]* out a wrong direction' (Follett, 1949, p. 49; insert not in original). 'Domination…is the easiest way of dealing with conflict, the easiest for the moment but not usually successful in the long run'

(Follett, 1941, p. 31); 'Any attempt at arbitrary control sets up antagonisms in the other person or group that will defeat you in the end' (Follett, 1924, p. 190). This is supported by findings from collective action studies of the existence of willing punishers, people willing to punish non-cooperators even at a cost to themselves (Ostrom, 2000, p. 142; Ostrom, 2010, p. 161-2). In fact, according to Ostrom (2010) 'Several of the heuristics or strategies posited to help individuals gain larger cooperator's dividends depend upon the willingness of participant to use retribution to at least some degree (p. 162). Reflecting on Follett's work, Melé and Rosanas (2003) state that using 'joint power to overcome the difficulties of the practical world is obviously more effective than neutralising part of the power of one party as it struggles with another' (p. 39). 'When the accomplishment of a department is the result of a feeling of joint responsibility…that accomplishment is likely to be of a higher grade' (Follett, 1949, p. 49). For Follett (1924),

> *'social process may be conceived either as the opposing and battle of desires with the victory of one over the other, or as the confronting and integration of desires. The former means non-freedom for both sides. The latter means a freeing of both sides and increased total power or increased capacity in the world' (p. 301-2).*

Parsons argues that commitment and trust (or 'bindingness') enable a shift from zero-sum to positive sum value and power creating systems (Parsons, 1963, p. 237, 252-6). In contrast, power exercised through violence is too crude an approach to 'mediate a complex system of organizational coordination' required for positive sum power and value creation (Parsons, 1963, p. 240). Haugaard (2015) concurs, stating that 'the more coercive the political system, the more zero-sum and unstable it will be' (p. 150). To 'be the generalized medium of mobilizing resources for effective collective action' power must move beyond coercion to 'be both symbolically generalized, and legitimized' (Parsons, 1963, p. 240).

Haugaard (2015) argues that

> *'in a functional comparative context, democratic systems that deliver positive-sum concerted power will do better than coercion-based, political systems. As a consequence, the closer a system approximates to the ideal type, the more likely it is to survive as a system—a virtuous cycle. For this reason, there are functional pragmatic reasons for the emergence and survival of democracy in modernity' (p. 151).*

These arguments that power-over limits overall value creation and collective flourishing is reflected in Spinoza's work as Ruddick (2010) notes

> *'For Spinoza, humans must collaborate with one another to enhance their* potentia*, their power to act. In the maximization of this objective, a collectivity that would form for the purpose of exploiting another would lose the possibility of a still greater collective power' (p. 24).*

These scholars from across organisational studies, political theory, economics, and philosophy provide support for the idea that power-with and value sharing better support collective flourishing than power-over and value hoarding. However, more work is required to further develop these ideas and test their robustness further in practice, including within the context of government data assemblages.

That said, they provide a solid guide regarding some of the features of a power-with to inform ongoing theorisation and experimentation.

In the end, my research question might be expanded to one of how governments create policies, programs, data assemblages, and public administrations that, rather than creating suffering, frustration, and resistance, instead create joy, trust, and shared commitment. What does that look like? As Ruha Benjamin reminds us,

> *'Remember to imagine and craft the worlds you cannot live without, just as you dismantle the ones you cannot live within.' (Benjamin, 2021)*

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