Dis/agreement in participatory organisations: low theory and democratic governance in cybernetics.

A thesis submitted for the degree of James David Fox.

Essex Business School

University of Essex.

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Abstract

This thesis explores the relationship between organisational cybernetics and participatory democracy, considering their tensions, resonances, challenges, and futures. Based on the lessons drawn from five case studies, the project emerges out of the synthesis of multimodular forms of data, drawing on interviews, texts, personal experience, and observations. The research draws on the experiences and interpretations of both practitioners and academics and is both participatory and iterative in its methodology. Both cybernetics and democracy are approached as wide-ranging discourses, the meanings of which shift depending on the contexts in which they are applied. In the case of the former this involves approaching the subject as extra-scientific, rendering cybernetics more conducive to democratic environments.

The project draws on Stafford Beer's work on cybernetics while also introducing forms of analysis which have remained absent from cybernetics' application to democratic organisations, particularly the work of Jack Halberstam and Jacque Rancière. Many original concepts emerge from the project, the two most notable of which concern the contextually relevant articulation of cybernetics in democratic spaces, which I call *low cybernetics*, and the facilitation of dissensus within cybernetically governed organisations, which I call *spaces of dissent*. This dissensual notion of democracy requires a shift in the approach taken to applying cybernetics, requiring a spatial rather than process-based approach to design and governance. The thesis contributes to the development of a non-managerial interpretation of cybernetics, with a focus on using the skills, knowledge, and intelligence of entire groups of organisers, rather than leaving major decisions to a small group of managers. Such a shift is likely to lead not only to more inclusive and democratic ways of organising, but also to improved decision-making which draws on the experience of all those with relevant knowledge.

Acknowledgements

Contents

Key

- AOS: Alternative Organisation Studies

- CMS: Critical Management Studies

- HG: HyperGroove

- S2: SeedShare

- H2: Hive2

- PK: Premium Collative

- OS (PK's): Operating System

- CK: Common Knowledge

- SoFA: Sociocracy For All

- SCiO: Systems and Complexity in Organisation

- VSM: Viable Systems Model

- TS: Team Syntegrity

- KPI: Key Performance Indicator

- RoPC: Redundancy of Potential Command

- LoRV: Law of Requisite Variety

- RV: Requisite Variety

- BotF: Brain of the Firm

- POSIWID: the purpose of a system is what it does

- CANS: Concise, Accessible, Non-trivial and situationally Specific (heuristics guiding low cybernetics)

Chapter 1: the good, the bad and the messy within the cybernetic canon

"For, like all rulers, they started from the assumption that society must be controlled, whereas cybernetics, like anarchism, teaches that a healthy organism controls itself."
(Duijn, 1972, p94)

"The next question that might be asked is: if interdisciplinary cybernetics has been hard at work for half a century, and has such value, why are its achievements not generally acknowledged? The answer is that they are acknowledged. But are unrecognised to be what they are." (Beer, 1994, preface viii)

1.1 Why democratic cybernetics

1.1.1 Democracy in the workplace

Our government is often legitimised on the grounds that it is a democracy in which our voices are listened to and shape the ways in which our society is governed. We elect our leaders, influence their policies, and have the right to move freely between places of work, it is argued. As well as these individual affordances, there remain workers' rights; rights to assemble and for some the right to join unions to collectively bargain against those who might exploit them. All this we call a democratic society, one where we are free to participate within the shifting limits dictated by law, government, and our employers. But cracks rapidly begin to show in this defence of state democracy when we ask what democratic governance implies. The word is reduced in representative democracies to occasionally voting for a new ruler, from a few select members of a couple of carefully curated political parties. The politicians we vote for are widely understood to be dishonest, fickle and at ease with lying to gain popular support, and the media environment which frames the political process is equally distrusted (Ortiz-Ospina, 2016; Quilter-Pinner, 2021). In either case, small groups of people with vested, personal interests and unimaginable informational reach curate and present messages to the people, priming them to endorse the questionable claims and policies of politicians. All this is a far cry from a society governed by its people.

Setting aside questions of the state, there is another domain which is arguably more incessantly implicated in our everyday lives, where most of us spend much of our waking time: the world of work. Notwithstanding the supposed right to choose our line of work within capitalist society - if the necessity of income doesn't supersede our desires and lead us to accept whatever work can be attained - there is precious little democracy in the world of work to speak of, even when democracy is understood at the shallow, surface level of representative

democracy. Decisions are made elsewhere by managers with little need to consider the views of their workers, for profits which are kept from those who produce them; work is surveilled and workers' activities are controlled by their superiors; the opinions and interests of workers are rarely accounted for, let alone their imagination and creative potential. As Bob Black puts it:

> *"The official line is that we all have rights and live in a democracy. Other unfortunates who aren't free like we are have to live in police states. These victims obey orders or else, no matter how arbitrary. These authorities keep them under regular surveillance. State bureaucrats control even the smallest details of everyday life. The officials who push them around are answerable only to higher-ups, public or private. Either way, dissent or disobedience are punished. Informers report regularly to the authorities. All this is supposed to be a very bad thing. And so it is, although it is nothing but a description of the modern workplace."* (Black, 1986, p20-21)

In the context of modern working life, democracy begins and ends with the 'right' to become unemployed and seek work elsewhere. Once within employment there is precious little choice but to follow the demands of one's employer, irrespective of their morality, value, or expediency. A Taylorist treatment of workers, as resources to be efficiently utilised for the benefit of a company's owners, still predominates. Output is maximised, and affordances are given to workers within only the constraints of law (or as a means of retaining a continuous supply of healthy workers). When the consequences of company policy (or the whims of higher-ups) are considered at all, it is seen through the eyes of Human Resource management (HR) and Public Relations (PR), practices which emerged directly from the profoundly anti-democratic philosophies and practices of the likes of Edward Bernays and Walter Lippman, based on the assumption that workers are too stupid to be granted autonomy over their work, capable only of following the carefully curated orders and messages from their presumed superiors (Bernays, 2005; Lippmann, 2017).

1.1.2 Autonomy and Taylorism

It might be argued, however, that in many lines of work today things are not so bad as they once were. Freedoms are granted within workers' areas of expertise; hours are more flexible and working from home is rapidly becoming a norm for many. However, this marks little more than a shift in mangers understanding of worker productivity; realising that in some lines of work higher quality labour can be extracted from workers when they are afforded more autonomy, flexibility, and independence. Project management approaches like Agile design processes and Scrum emphasise the benefits of providing freedoms to workers within the specific domains of work they oversee. Allowing workers to gain what has been referred to as *purpose, mastery and autonomy* over work increases productivity and ingenuity within many domains of work, continuing the tradition of Taylorist management around a new understanding of behavioural psychology (Pink, 2011). Workers in these contexts are still seen as instrumental producers of content and profit but are now understood to possess emotional and psychological needs, as well as creative potential to improve their domains of work, which astute leaders can reap the benefits of. While some domains of work nudge employees towards greater control over their work domain (while remaining excluded from decisions pertaining to the organisation as a whole) other lines of work gain more from excluding their workers from even the stability of permanent employment which was once a silver-lining of Taylorist employment, as precarious and impermanent work has gained an enormous foothold within the global economy. Such work provides increased 'flexibility' but sacrifices any hint of being valued or irreplaceable for the organisation, as well as foregoing many of the workers' rights which protect employees.

This all indicates that the world of work is changing in many respects, but its changes remain oriented around the extractive Taylorist principle of productive efficiency. The autonomy which some lucky workers now find extends no further than their limited role within the organisation, remaining excluded from questions regarding how the organisation is run, the

goals towards which it should progress, how profits should be shared, and so on. The benefits some workers enjoy are extended only so long as they continue to increase productivity and could be withdrawn with the same justification which introduced them. As workers at some companies have gained greater autonomy in their day-to-day work, workers at companies like Amazon have even the most basic freedoms withdrawn, with horrifying accounts of work conditions being commonplace. The autonomy provided by work places varies in the extreme - with some encouraging employees to set their own production quotas and share in profits (Semler, 2001; Moreira, 2017; Pink, 2011), while others skip toilet breaks to keep their jobs (Organise, 2018).[1] In either case democratic control over the conditions in which workers are placed remains out of the workers hands altogether. Even those lucky employees who control aspects of their day-to-day work - how they approach tasks and so on - are unable to participate in the organisation beyond the limited domain which benefits the company's owners.

All of this seems quite out of step with the democratic culture which our society claims to uphold, and the intuitive appeal which draws people to desire control over their lives and the systems of which they are a part. Even for those with little desire to participate in governance, the ability to influence domains of life which have direct impacts on our day-to-day lives, our well-being, and the well-being of our loved ones, is surely something towards which we should strive.

1.1.3 Alternative organisations and cybernetics

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[1] Notable here is not only the extreme variety of freedoms provided to workers across different workplaces, but perhaps more pertinently, the inequality of freedoms which exist within the same workplace. At Google, for example, a colour-based caste system exists, in which workers are provided various privileges and opportunities based on the type of work they perform, denoted by differently coloured badges. 'Yellow' workers, the lowest layer of Googles internal hierarchy (responsible for data entry labour such as digitising books) are excluded from riding Google bikes, riding the shuttle buses home, eating free meals, attending free talks, entering buildings other than the ones they work in, receiving the backpacks, thumb-drives and mobile devices which other employees are provided with, and are discouraged from interacting with any other Google employees (Wilson, 2011).

The ubiquity of this undemocratic philosophy of work is perhaps unsurprising in the context of the educational norms surrounding organising and organisation; orbiting only market managerialism and teaching students that there is a single approach to organising people, oriented around standardisation, homogenisation, hierarchy and bureaucracy (Parker, 2018). But despite pedagogic conditions discouraging escape from these managerial norms, there are many alternative ways of organising gaining experience, evidence, and popularity. These approaches often treat the perspectives and ideas of their workers not as noise to be silenced, nor as antagonisms to be tolerated and withstood, but as perspectives of value which might provide insights beyond the purview of managers or key decision-makers, beneficial not only to the company and its beneficiaries, but to the workers for their own sake. Many such alternative forms of organising are being suggested, invented, and experimented with and aim to provide altogether different means of structuring work and organisation, such that both organisations and the workers who make them up benefit and flourish without the former exploiting the latter as a mere instrument of efficiency.

Despite many exciting and promising alternatives emerging, there is little uniformity to these ideas, little stringing them together in such a way that commonalities can be detected between them (Land, 2014). Each is based on its own organisational philosophy, each with their own language to frame, understand and convey organisations and the participants within them. The heterogeneity of these approaches has led to a varied range of organisational alternative, but also an inability to detect the themes which bring them together, which make them resonate with one another, despite their commonalities and shared interests. If alternative forms of organisation are to be understood within a common framework what is needed is a shared organisational language, one which is cognizant of the resonances between the diversity of practices which constitute democratic and non-managerial approaches to organising. This all begs the questions: is there such a language which brings diverse and varied systems into a

common framework? Are there commonalities between the world's diverse systems which can demonstrate how systems are held together, and light the path towards forms of organisation more in line with participatory, egalitarian, and democratic ideals?

Any convincing answer to this question must surely be a plural one, made up of many understandings, perspectives, and experimental approaches - since the very question is how to break out of the uniformity of the undemocratic mode of organisation our society has become accustomed to. But there is a set of ideas which may offer a particularly potent response to these questions, and which has remained oddly absent from many recent discussions concerning the production of alternative means of organising, despite its direct relevance on the question at hand. Cybernetics, according to Stafford Beer, is best understood as the *"science of effective organisation"* (Beer, 1993, p13), and with that definition in mind it might be natural for those asking how organisations can be formed in more democratic, participatory and inclusive forms to turn towards this little understood trans-disciplinary discourse. Cybernetics seeks to find and articulate commonalities between forms of complex systems, whether natural or manufactured, biological or mechanical, microscopic, or macroscopic. By looking at common traits between these systems - elements and mechanisms they share - cybernetics seeks to produce an understanding of organisation in general: how they are formed, how they operate and how they are sustained over time. This project will remedy the absence of cybernetics from discussions of democratic alternatives by situating the subject not as *the* answer to this complex problem, but as a toolbox of possible answers and aides which might contribute to the discovery and development of better ways of working democratically.

1.2 Reaching democratic cybernetics

From the outset I went into this project with a commitment to democratic and participatory organising and I intended to extract from cybernetics whatever might be taken from its history to further this ethico-political position. My draw towards cybernetics came from a commitment to exploring and developing ways of imagining and implementing new kinds of social formations, new modes of governance and organising, which might lead to ways out of the oppressive and oligarchic forms of organisation and governance which predominate. It was the drive to explore such alternatives which led me to explore both AOS and cybernetics as means of conceptualising and articulating viable alternative languages and methodologies of organising. Both seemed to be concrete but under-developed resources for conceptualising and designing more egalitarian organisations.

In cybernetics I saw strong but often untapped resonances with these political and ethical aims, and the project was intended to challenge, explore, and draw out of cybernetics the democratic potentiality which I saw lying dormant within it. Consequently, while some of my findings take a critical position regarding cybernetics, those criticisms are made in the interest of facilitating the further development and improvement of democratic cybernetics, rather than undermining it. Problems and limitations are found within cybernetics, but amelioration of those problems is found within the same discourse. I was not alone in looking towards organisational cybernetics as a source of guidance for democratic and participatory organisations, with my work continuing down a path which had been laid out by the likes of McEwan, van Duijn, Walker, Espinosa, Swann, Duda and many others.

1.2.1 The good

During the months leading up to my application to conduct this research I became engrossed within the world of cybernetic theory, fascinated by its history and hopeful of its future. Texts

like Fritjof Capra's *Web of Life* gave me a profound vision of how the complex world and systems within it collaborate and conflict with one another and themselves, while books like Beer's *Designing Freedom* filled me with the sense that cybernetics could be used to create radically different and more viable organisations (Capra, 1996; Beer, 1993). What is more, I was led to see deep democratic potential in cybernetics. Writings from the likes of Beer, Walker, Swann, Duda, Roel van Duijn and McEwan were indicative of the connection between effective organisational design and the utilisation of the skills and intelligence of *all* members of the organisation, working together collaboratively and autonomously (Beer, 1993; Espinosa, 2008; Swann, 2018; Duda, 2013; Duijn, 1972; Swann, 2020; McEwan, 1963; Holmes, 2009). These writings impressed upon me the intuition I had often sensed: that it was deeply unwise to leave organisations to the whims of a small managerial minority, with their own unique biases and interests, and give them near unrestricted power over the participants below them. Writers like McEwan showed that the variety of factors which could be accounted for by such a managerial class was incomparable to the variety which could be perceived, recognised and acted upon by the participants over whom they manage (McEwan, 1963). The difficulty was in designing organisations in such a way that this collective intelligence could be utilised and capitalised upon by the organisation in a way which benefited its participants and the organisation alike.

Having developed a strong sense of potential around cybernetics I began to see the democratic radicality of cybernetics in everything I read; at all levels of scale and common between all sorts of complex system: whether biological, neurological, organisational or whatever else (Varela, 1991; Bateson, 2000; Bateson, 1979; Mead, 1973; Heylighen, 2016). As well as intuiting the democratic potential within cybernetics, connections began to emerge between those ideas and other writers I was considering, particularly alternative organisational ideas which put participation and democracy at the fore. Models like sociocracy, which I will discuss

at length during this project, seemed to be a popular and effective governance approach, and it was only after considering the model in detail that I learned of its deep roots in the same cybernetic paradigm (Buck, 2012). Other writers I will consider later, like Cottam, Marsh, Laloux and Jones similarly had the signature of systems and cybernetics backgrounds, and it soon became difficult to think of radical organisational approaches which didn't contain the traces of cybernetics (Cottam, 2018; Marsh, 2013; Laloux, 2015; Jones, 2018).

1.2.2 The bad

During this exploratory investigation of cybernetics and its radically democratic possibilities, I was equally aware of another history of cybernetics, one more widely known in contemporary discourse, and far more disconcerting about the possible outcomes of our cybernetic society and culture. Despite clearly emerging from the same history, conceptual patterns, and worldview, it was often hard to see the two histories of cybernetics as anything other than radically distinct. The paths that different cyberneticians had been led down seemed to lead to such incompatibly different ends that it was hard to see how they could have originated from the same paradigm.

From its origin cybernetics had emerged out of a thoroughly militaristic environment, discovered first in the context of shooting down fighter jets, and later becoming deeply infused within the American military both at a theoretical, conceptual level and at the concrete level of their tools, capabilities and design philosophy (Rid, 2016). Equally, the discipline had emerged in parallel out of psychiatry, and the troubling experimentalism which led to the destruction of countless human lives through secretive and invasive experiments which gained little while taking everything from its unwilling patients (Pickering, 2010). Perhaps most troubling of all was when military and invasive psychology came into contact with each other (Thomas, 2008; Moreno, 2012; Valley, 2003). Many writers, aware of these dark histories, have argued that it is the impact of cybernetics on society that has led to many of the worst

dimensions of governance and control in today's world, with writers like Deleuze, Tiqqun and Lafontaine arguing that the 'control society' we live under is not only a seemingly inescapably condition, creeping ever deeper into our societal consciousness, but is an inevitable outcome of the cybernetic worldview which has emerged over the past century (Tiqqun, 2020; Lafontaine, 2007; Deleuze, 2017).

On a more mundane, less perilous, but equally troubling level, there was a tendency within organisational cybernetics to draw on its managerial history and reinforce pre-existing conventions, strengthening undemocratic governance approaches. Even within quite radical cybernetic experiments, such as the Cybersyn project in Chile during the 1970s, there were accusations that despite Beer's rhetoric of radical organisational change and a rewriting of managerial convention, his project ended up doing the opposite by reinforcing established knowledge hierarchies:

> "*Contrary to Beer's view of the project, a number of the engineers described their work primarily technical, rather than political, and saw the end goal as creating a new tool for economic management. One of the members of the Chilean team… poignantly summarised the situation:*
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>> "*... the final objective, 'the revolution in management' is not accepted, nor even understood... I haven't seen a single manager really motivated by the central concept, and what is worse... [of] the team that has developed the work only a very few present the concepts involved... Ultimately your work is accepted as long it provides **tools** to achieve a more effective **traditional** management. It is not a halfway revolution, it is a mixture, which if not adequately cared for might end up meaning a new increase in bureaucracy.*"
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> *To put it another way, these new technologies served to entrench further many of the management practices that had disempowered workers prior Allende's presidency, rather than to bring about revolutionary change.*" (Medina, 2006, p33)

These questions led me to doubt the radical impacts of organisational cybernetics and ask if cybernetics can be as easily used to conserve existing forms as governance as to supersede

them. Whether by intention or error, what appeared to be revolutionary organisational approaches sometimes ended up simply re-establishing conventional governance practices, making outdated approaches better able to survive rather than reaching the root of organisational pathologies.

1.2.3 The messy

Emerging from these conflicting reflections was, on the one hand, the question of the extent to which cybernetics offered a radically ulterior approach to organising, one which could redesign approaches to governance such that organisations could become more directly democratic, while also becoming more stable and viable over the long term. On the other hand, emerged the *messiness* of cybernetics: a range of mentalities regarding governance which spanned the political spectrum, relating to all sorts of organisations, from hierarchical to egalitarian, from traditional to radical (messiness is discussed in more detail during section 3.3.7). Even within the single character of Beer himself there seemed to be many figures intertwined. There was Beer the management consultant, Beer the revolutionary socialist and Beer the guru. There was a Beer who spent his time propping up existing institutions and working for their refinement, and there was a Beer who sought to tear down existing governance approaches and replace them with something altogether different. In many ways he was all these characters intertwined, and those who followed in his footsteps, from Malik to Swann, took different lessons from Beer, followed different aspects of his thinking and took on different implications of his work (Malik, 2018; Swann, 2020). The tensions, contradictions and overlapping implications between these varied interpretations of Beer applies even more so to cybernetics as a whole. There were conventional managerial interpretations of cybernetics and the VSM (Malik, 2018), state democratic and socialist interpretations (Espejo, 2011), free-market interpretations (Cantu, 2019), cooperative, democratic, and commons based perspectives (Espinosa, 2013; Espinosa, 2008), and anarchist visions (Swann, 2020);

and these were just the perspectives discussed and debated during an average Metaphorum meeting.[2]

My initial investigation of cybernetics had led me to focus on its radical, egalitarian implications for reimagining how society and the organisations within it could be restructured and designed anew; but as I learned more about the diversity that lay within the trans-disciplinary paradigm what emerged more clearly was the mess of cybernetics. The subject had no essential political character, it was what its user made of it: revolutionary in the hands of radicals, fascistic in the hands of tyrants and a continuation of mundane managerialism in the hands of managers. There was a deep ethical ambivalence within cybernetics, as capable of making an egalitarian organisation more effectively egalitarian as it was of making tyrannical organisations more effectively domineering. What mattered within cybernetics was not an imagined political essence but the intentions, purposes, and political goals towards which it was directed by its users. It was with this understanding in mind that I set about approaching cybernetics from an explicitly democratic and participatory perspective, not out of a belief that this form of organisation was naturally preferred by cybernetics, but as a political decision to approach the subject with a particular ethical orientation. There were many histories of cybernetics, inter-twined together in a mess of tangles, and the emergence of a coherent democratic cybernetics from that mess would require not just the selection, articulation, and refinement of its democratic implications, but an open-ended exploration of cybernetics, democracy, and vitally their resonances and tensions.

1.2.4 Introducing the project

It was with these thoughts in mind that I set about exploring the relationship between cybernetics and democracy, taking seriously the tensions, critiques, and limitations at the heart

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[2] Metaphorum is the key group discussing and developing Beer's work, which I joined during my research.

of the former regarding the latter. Furthermore, it was only by looking beyond the boundaries of cybernetics itself, taking seriously lessons from democratic theory and practice, that an authentic conceptualisation of democratic cybernetics would become possible. I therefore draw not only on the history of cybernetics in service of this aim, but equally on democratic resources which might aid my understanding of how cybernetics relates to the latter.[3] In service of these questions, this project seeks to conceptualise cybernetics in terms of participatory and democratic organising. I will explore the language with which cybernetics is conveyed; discuss its issues, roadblocks, and how those hurdles might be overcome. I will explore the tensions at the heart of this relationship and critically analyse the conceptions of democracy which have been included in already existing expressions of democratic cybernetics. Emerging from the study will be several novel academic contributions, the most notable being two original concepts to help in the development of a democratic cybernetics, which I call *low cybernetics* on the one hand and *spaces of dissent* on the other.

1.2.5 Key contribution from the project

The project resulted in many key contributions to the study of organisational cybernetics, alternative organisation studies (AOS) and the design of democratic organisations. Additionally, the project contributes to Rancièrian readings of democracy, especially as they pertain to being practiced within organisations. I draw attention to the overlapping concerns and priorities of democratic and cybernetic theory, unveiling the relationship between the two and the possibility of each one contributing to the other. This leads me to explore the challenges which emerge from developing democratic cybernetics, as well as showing that these problems are resolvable, given an appropriate interpretation of both disciplines and their

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[3] This is on account of my conception of cybernetics amounting to a language which passes *between* distinct discourses (trans-disciplinary), rather than operating *over* them (meta-disciplinary); meaning that democratic cybernetics has as much to learn from the history of democracy as it has to learn from cybernetics (discussed during section 2.5.5**Error! Reference source not found.Error! Reference source not found.**).

inter-relationship. These findings are supported through both empirical and theoretical evidence throughout.

The key conceptual outcomes of the project - *low cybernetics* and *spaces of dissent* – emerged from my empirical observations and reflections during the study and are supported with varied qualitative forms of evidence. *Low cybernetics* emerged from my investigations of four case study organisations, drawing on interview data, netnographic analysis and self-reflective autoethnography. *Space of dissent* emerged from a more focused and in-depth investigation of one organisation, following the observation of a rich digital forum which has logged discussions between PK's members for well over a decade, as well as interviews with participants. Towards the end of the project I show, drawing on theoretical insights from across the project, that these two key contributions are strongly interrelated with each other, and are to some degree each dependent on the other to flourish.

1.3 Summarising democratic cybernetics

This research project spans four major themes and from it emerge two key conceptual outcomes. In a sense the findings presented here can be framed as concerning two characteristic aspects of cybernetics in the form of 'communication' and 'control' (Wiener, 2019). Findings chapters 1, 2 and 3 relate to the former. Although these three chapters take on distinct questions and orbit different themes, they all ask how and to what extent cybernetics can be effectively *communicated*, learned, and implemented within democratic organisations. Are cyberneticians able to clearly articulate cybernetic models to practitioners? More fundamentally for democratic cybernetics: are amateur democratic participants able to learn and implement the ideas themselves without the oversight or guidance of experts? The fourth findings chapter turns my attention away from language and communication and towards the question of democratic *control* in participatory organisations. I argue that writings on democratic cybernetics have tended to characterise democracy as a way of coming to agreements, or consensus, and have implicitly excluded an appraisal and analysis of dissensual understandings of democracy. I argue that conceiving of democracy not as a process of simply coming to agreements, but as a means of mediating between a consensual and dissensual understanding of democracy and democratic action, leads to a conception of cybernetic control far more resilient and disruptive to cybernetics' tendency towards technical, expert-based governance through what I call *knowledge priesthoods*.

1.3.1 Democratic cybernetics in review: democracy, alternative organisations, and cybernetic governance

First, I discuss the academic background behind this project. I will discuss the initial stages of this research and the organisational themes I drew on while the project took shape, including my focus turning from AOS to democratic organisations, and a shifting stance from looking

at cybernetics scientifically to conceiving of it as a wide-ranging discourse. I also consider the academic contributions this project seeks to make. I then discuss democracy, both in consensual and dissensual terms before turning my attention towards a series of interventions from cyberneticians interested in democracy, considering the existent research which has sought to offer democratic readings of cybernetics. Here I will consider a variety of approaches which take influence from systems thinking and cybernetics approaches and offer novel conceptions of participatory organising which draw influence from both consensual and dissensual notions of democracy. Following this I will briefly consider some of the cybernetic themes in this text before taking a closer look at Stafford Beer's work, the foremost theorist of organisational cybernetics.

1.3.2 Messiness, low theory, and heuristics: an iterative methodology

This will lead to my methodology chapter, in which I discuss my data collection methods and research approach in more detail. I discuss the influence that PAR approaches had on my research and discuss two preceding cybernetic PAR studies into democratic organisations (Swann, 2018; Walker, 1991). I will discuss other dimensions of my methodology, such as its considerable influence from the low theory of Halberstam, Wark and Hall, as well as a focus on heuristics as an understanding of democratic communication. I will discuss my methodological treatment of messiness and failure, a theme which increasingly became central to the project. Following Halberstam, I will treat failure not as a problem to be avoided or minimised, but as a productive and generative necessity (Halberstam, 2011). I then discuss the iterative approach the project took and outline the progression of my research phase by phase as it developed. The penultimate portion of the chapter will discuss data sources, interview subjects and case study organisations. Finally, I will briefly discuss the limitations of the study.

1.3.3 Findings chapters

The main portion of the thesis is articulated through four findings chapters in which I discuss the key results of the study. My first findings chapter looks closely at the question of communicating cybernetics within democratic organisations and considers the impressions of cybernetics held by democratic participants. I focus on a discussion which took place between members of the Suma cooperative regarding the usefulness of the VSM within their organisation. This will lead me to contrast the rigorous scientific framing of cybernetics to the simple and imprecise forms of communication characteristic of democratic groups, which I will call *participatory clarity*. This will lead me to discuss conflicts which emerged within cybernetics democracies due to divisions between *knowledge priesthoods* of cybernetic experts on the one hand, and those who developed *VSM fatigue* on the other. Finally, I will discuss *operative understandings* of cybernetics, an argument which distinguishes between knowledge of cybernetic theory and a capacity to operate cybernetic systems; a distinction used by some cyberneticians to explain participants unequal knowledge of, and interest in, cybernetics.

The second findings chapter concerns the application of cybernetics in democratic organisations, discussing two key tensions which complexify the task of bringing organisational cybernetics and democratic governance into synergetic dialogue. First, I discuss the contrast between *cybernetic intuition* and *democratic pedagogy*, drawing on themes introduced during the previous chapter. The latter refers to the *participatory clarity* which is characteristic of democratic language: easily understood and drawing on shared language; contrasted with the often terminologically dense and rigorous language of cybernetics. This, I hold in tension with the observation that some participants appear to have an 'intuitive' proclivity towards systems and cybernetics language, while others seem to have the opposite. This leads to a tension between democratic language tending towards ease of understanding and accessibility, and the seeming inaccessibility of cybernetics to some participants of

democratic groups. Second, I consider the tension between cybernetic *invariance* and what I call *contextuality*, in which I discuss Beer's characterisation of cybernetics as pertaining to invariant systemic laws, while contrasting this to the deeply contextual and variant democratic models such as those used by PK. I also consider an alternative interpretation of cybernetics more conducive to the contextuality of democratic organising, drawing on Pickering's performative ontology and models like sociocracy as examples of contextually embedded cybernetic systems. While invariant models, laws and patterns may be informative to democratic cybernetics, contextually embedded approaches are likely to be more tailored around democratic needs and are therefore better positioned to be embraced and incorporated into democratic governance design.

The third findings chapter draws the themes introduced by the two preceding chapters together and offers a way of thinking about cybernetics differently to better characterise it within a democratic context. I propose *low cybernetics* as a way of thinking about, articulating and using cybernetics effectively within a democratic context and argue that it might lower the barrier to accessibility for participants. This argument emerges from my observations of *heuristic language* being incorporated into democratic organisations over time, which act as short-hand phrases and enable easily understood, clear and contextually specific communication of ideas. I argue that democratic cybernetics should follow this example and present itself in contextually specific and easily understood metaphors, articulated through relevant means of communication, tending more towards simple, operative diagrams than technical drawings more appropriate for technicians than democratic participants. I will discuss a variety of evidence of organisations and practitioners conveying cybernetics in 'low' or heuristic terms, which demonstrate the possibility of a low cybernetics which can be more effectively communicated democratically.

My final findings chapter turns my attention away from the communication and application of cybernetic theory, and towards the issue of characterising democracy from a cybernetic perspective. I will argue that existent treatments of democratic cybernetics have framed it primarily as a means of developing processes which help groups to reach agreements together. By reintroducing the themes of dissent and dissensual democracy to my discussion, I will show that democracy is best understood not merely as a consensus establishing process but, following the unorthodox interpretation of Rancière, a means of enabling participants to dissent from existing agreements, and in doing so contribute to the alteration, adaptation and inventive improvement of established organisational practices. This chapter will draw heavily on my study of PK and especially their use of a simple online forum to enable both radical participation within the organisation while also facilitating a space open to productive dissent and disagreement. I will argue that it was precisely this openness to dissensus which enabled PK to survive the worst of the Covid pandemic. This will lead me to argue that cyberneticians interested in democratic organising should give as much attention to the facilitation of spaces in which dissent can happen, as they should to processes which might enable consent to be established.

1.3.4 Democratic theatre: dissent from high theory and ad hoc cybernetics

Following the development of my research findings I will draw together the resonances and relations between my key research outcomes, showing how both *low cybernetics* and *spaces of dissent* are mutually interrelated and dependent on one another. I will do this not only by reflecting on the two concepts' relationship with one another, but by elaborating a common metaphor which runs through the preceding chapters, reappearing in distinct but related references to *staging*, *theatre* and *performance*. By considering these themes I hope to clarify and develop the resonances between *low cybernetics*, *spaces of dissent* and the wider communicative themes established during the thesis. I will also return to the question of

operative understandings of governance and show that my consideration of dissensual democracy problematises the notion of operative knowledge within democratic organisations defended by Walker and Phillips during my first findings chapter (during section 4.6.2).

1.3.5 Concluding thoughts: towards a low cybernetics of dis/agreement within democratic spaces

Finally, I will draw the study to a close, summarising my project and returning to a discussion of the academic literature and my project's contributions to it. I will consider the academic contributions of this work and discuss the key role of failure and messiness within the development of this thesis. Finally, I will touch on some potential future avenues of study and consider research which might emerge from the work presented here, leading to a more effective and appropriate articulation of cybernetics within democratic and participatory organisations.

Chapter 2: Democratic cybernetics in review - democracy, alternative organisations, and cybernetic governance.

"In fact, Beer himself felt that while the use of managerial authority appeared to be an easy way of dealing with organisational problems in the short term, it is really a very crude solution, and that the most appropriate way to create an efficient business is to give everyone as much autonomy as possible." (Gross, 2020)

*"Society proceeds instead by **consensus** that lowest common denominator of alternative democracies, which buys protection against megalomaniacs, fascists, charlatans and lunatics, and which also protects us from novelty, unique ability, change and leadership."*
(Beer, 1975, p49)

2.1 Introduction

The focus of this project shifted over the course of my research, though the net of elements making it up have remained the same throughout. This chapter will review the network of interlinked subjects, disciplines, concepts, and figures, and set the stage for the findings which will follow. At the outset of this research my work was framed within the broader heading of alternative organisations studies (AOS) and its relationship with cybernetics, the latter being understood in terms more scientific than discursive. I was interested in proposing cybernetics as a means of grounding AOS within a trans-disciplinary scientific framework, providing a shared language for discussing and designing alternative organisations, as well as assessing the effectiveness of their implementation. This, I argued, was an important condition of alternative forms of organisations developing a shared way of assessing the conditions in which non-managerial forms of organisation could survive and flourish.

This line of questioning began to shift, however, as I investigated my domains of enquiry in more detail and considered their interlinked relationship. [4] First, what organisational 'alternatives' were of interest to my study? I knew, from the outset, that the alternatives I wanted to explore were, as Parker and others had made explicit, alternatives to managerial conventions in the organisation. But 'non-managerial' still left a lot to the imagination, and it

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[4] My initial goal was to articulate the cybernetic presuppositions necessary for democratic organisations to be developed and allowed to flourish, understood in scientific terms. This would amount to the expression of a rigorous conception of how democratic groups might be organised to ensure the equality and participatory power of all its members, expressed in the form of various cybernetically grounded proposals necessary for a democratic system to remain viable. However, I soon realised that this scientific mode of enquiry was incongruent with democratic ways of organising, dependent more on open discussion and compromise than it was on rigorous argument and standardisation. Democratic modes of governance, at least the ones I was considering, were characterised by discursive modes of decision-making, processing ideas and their merits based on conversation, dialogue, and effective communication rather than on the scientificity of a particular model, or on the establishment of shared presuppositions. Practices and principles are more likely to emerge from experience, experimentation and, perhaps most importantly, contextual relevance within such environments. All these aspects of democratic practice seemed to be out of step with an argument articulated in terms of scientific presuppositions underscoring democratic governance. In this sense I began to realise the terms I was thinking in were speaking a quite different language from the one spoken by the audiences I was interested in contributing to. This was a motivating factor in shifting my perspective of cybernetics from a scientific to a discursive perspective.

soon became clear that it was democratic, which is to say participatory, alternatives which I was motivated to assist in the development of. A rigorous definition of democracy was not what I was after (though I did have a basic, heuristic understanding of democracy in mind (discussed section 2.3.1)) but democracy nevertheless was the most appropriate word to denote the approach to self-governance I was interested in bolstering in my research.[5]

As I investigated the ways in which democratic groups organise and make decisions, I was led to shift my thinking away from articulating cybernetics in scientific terms (though of course not denying or undermining the scientific history and characteristics of the subject), preferring to think about it as a set of practices, ideas and models which amounted to a far-reaching language - a conceptual toolbox - which might provide ways of thinking, collaborating and practising democratic governance (this shift is discussed in more detail during Chapter 4). Cybernetics has always been scientific, but never exclusively so. It has always bled into the arts, politics and spiritualities of those who have invested themselves in its elaboration, and an articulation of 'democratic cybernetics' I realised, would be far better off being couched in terms of such an open, discursive, and communication-oriented understanding of the subject. A non-scientific attitude towards cybernetics had precedence among some of its most well-respected theorists. Glasersfeld called cybernetics "*the art of creating and maintaining equilibrium in a world of constraints and possibilities*" (Lombardi, 2018) and when asked whether this should be revised to be 'the art *and science*' he retorted,

> "*You want to put science into it, I don't… because science is essentially built on causal relationships, and causal relationships are not important in cybernetics.*" (Lombardi, 2018)

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[5] I approached democracy in both a descriptive and prescriptive context. On the one hand it described a specific set of practices and ways of organising people, while on the other it prescribed a particular ethical commitment and ideal of what organisations ought to be. As I specified above, (during section 1.2) I approached cybernetics not only from a pragmatic perspective but also with a particular ethical orientation.

Von Foerster preferred to discuss cybernetics as a form of 'systemics' as opposed to science, a distinction he derived from the etymological roots of the terms:

> *""science", or "sciencia" in Latin, has been amazingly successful in the 2000 years since Aristotle. And what does "sciencia" derive from? The indo-european word for "sciencia" is "scy", and that is found in "science" and "sciencia" and in "schizophrenia", and in "schism", that is the word meaning "to separate". And so "systemics" is a parallel development, only it's the exact opposite of "science", for it integrates. When you think about it today, all this systems theory and systems research which crops up in both art and science, I wouldn't call that "science" anymore, I would call that "systemics". Today's science has moved on to an approach that sees things together: "systemics". So, I would see the steps taken today as being from science to systemics."* (Dammbeck, 2003)

This chapter will track my path through the research which contributed to this framing of my central research question and will introduce the key figures, texts, and ideas which my study centred around. First, I briefly contextualise Halberstam's low theory within the cybernetic canon, as his work was a key influence on my methodological approach as it pertains to approaching cybernetics discursively. Next, I briefly review AOS and managerialism since these subjects have had a noteworthy influence and bearing upon my research. Next, I look at several conceptions of democracy I considered during my project, focusing on the two which became most central to the study as it took shape. Following this, I discuss the existing literature on democratic cybernetics, before looking at several alternative organisational approaches which take influence from cybernetics and which can be characterised as democratic, whether they describe themselves as democratic and/or cybernetic explicitly. The penultimate section will move to a discussion of cybernetics broadly as well as an overview of some of the research which contextualised my investigation of cybernetics, before discussing in lengthier terms Stafford Beer's work, since his work played a significant role in

my project, and reviewing a number of concepts and models devised by him will contextualise the major ideas required to understand the findings chapters which follow.

2.1.1 Academic contributions

My research aims to make several contributions to both the fields of democratic and cybernetic theory by considering in more detail what the potential relationship is between the two diverse disciplines. In particular at least four contributions of this research stand out:

(1) First, I will contribute to the effective communication of cybernetics within democratic groups by showing limits and roadblocks to its effective communication, as well as considering means by which these limitations might be ameliorated. Specifically, my findings will uncover two key concepts to assist in the elaboration of democratic cybernetics: *low cybernetics* and *spaces of dissent*.

(2) Second, I will discuss the tensions between cybernetics and democracy on multiple fronts, which have led to the uneasy relationship between the two disciplines. These tensions must first be acknowledged, so that they might be effectively responded to and accounted for.

(3) These discussions will lead me to suggest approaches to using cybernetics in a democratic mode; suggesting that the use of less technical means of communicating cybernetics are more appropriate in democratic contexts, and that contextually embedded articulations of its implications more effectively lead to its successful adoption and sustainment. This will lead, in the third chapter, to a proposal of *low cybernetics* as a, yet only partially formed, means of understanding how cybernetics might be better conceived of in relation to its democratic practice.

(4) Furthermore, I will contribute to cybernetic discussions of democracy by critically analysing and elaborating the conception of democracy used within the existing canon.

Rather than doing this by proposing a distinctive and set notion of democracy, I will identify the presumptions and tendencies within democratic organisational cybernetics and introduce aspects of democracy this dominant characterisation excludes. Through the introduction of a Rancièrian conception of democracy, which has been neglected from existing works, I hope to make a significant contribution to cyberneticians' notions of what democratic organisation can be (and become). This will lead to me proposing *spaces of dissent*, and the question of their governance, as my second major research finding.

These contributions will, I hope, lead to a reappraisal of the democratic potential of cybernetics and to new discussions regarding the promising yet ambivalent relationship between the two discourses. The project has significant implications for drawing together various subjects of enquiry towards a more integrated conception of alternative organisational pedagogy and practice. I hope for it to help to shift discussions regarding democratic communication and collaborative organising towards drawing greater influence from various strands of research which have remained isolated from one another, especially in relation to alternative democratic structures. Specifically, the project draws together themes from (1) organisational cybernetics, (2) alternative organisation studies, (3) low theory and (4) Rancière's dissensual democracy. The next section will demonstrate the relevance of low theory to the question or organisational cybernetics, before moving on to discuss the other key academic areas of relevance to this project.

2.2 Low theoretic readings of cybernetics

Of the four areas of research referred to above two stand out as being characteristically outside of domain of cybernetics: the work of Jack Halberstam and Jacques Rancière. Because of these heterodox influences on my research the findings presented here do not cleanly fit into a single established academic tradition (due in part to the methodological influence of Halberstam on my work (discussed especially during section 3.3.5)). In this sense, the study presented here prefers to break new academic ground than to fit cleanly within an existing body of academic work. I have prioritised the creative exploration of the new within this research over situating it within pre-existing contexts of knowledge, committing to a low theoretical orientation in the interests of troubling convention and provoking intellectual change:

> "*The desire to be taken seriously is precisely what compels people to follow the tried and true paths of knowledge production... terms like serious and rigorous tend to be code words, in academia as well as other contexts, for disciplinary correctness; they signal a form of training and learning that confirms what is already known according to approved methods of knowing, but they do not allow for visionary insights or flights of fancy.*" (Halberstam, 2011, p6)

While there is evidence of a strong relationship between Halberstam's low theory and Rancière's conception of equality, there is little trace of cybernetics and systems thinking in his work (Ryynänen, 2018; Halberstam, 2011). Despite little work connecting low theory with organising and organisational cybernetics, work has been done into its bearing on questions of contemporary surveillance technology and the possibility of *"building meaningful resistance against algorithmic governance"* drawing on:

> "*pesky data that sneaks through the cracks of digital capitalism and dissipates into the unproductive… run-away data prone to misidentifications by digital marketers, coders, and content moderators… it celebrates data predisposed to "back-talk" with playful irreverence for those that seek to bring order through normative categorization and moderation.*" (Bridges, 2021, p1-2)

In contexts such as these cybernetics and the subversive potential of low theory, messiness and failure come into relation, where cybernetics is understood as synonymous with managerial capitalism, sometimes called *"control society"* or *"networked governance"* (Deleuze, 2017; Galloway, 2004), in which it is perceived as the antagonist, rather than a potential aide. To find low theoretic invocations of cybernetics with a more positive inflection, Wark's work provides a good place to start, tying in contemporary debates on technological society with reappraisals of figures like Bogdanov (whose work is often understood as setting into motion what would later become known as cybernetics). She has also provided low theoretic readings of Marx's *Fragments on Machines* and other prominent texts on technology, cybernetics, and emancipatory politics (Wark, 2015; Wark, 2013). Her work applies low theory to contemporary theoretical debates on technology, its dangers, and emancipatory uses, arguing that,

> *"Rather than imagine theory as a policing faculty flying high as a drone over all the others, a low theory is interstitial, its labour communicative rather than controlling… It does not set its own agenda but detects those emerging in key situations and alerts each field to the agendas of the others"* (Wark, 2015, p218)

Perhaps the text which most directly follows in the spirit of communication and conveyance of cybernetics taken up in this project, despite not explicitly drawing from low theory, is Graham Jones' work *Shock Doctrine of the Left* in which he considers the value of articulating systems language in more relevant and accessible terms for practical conveyance in democratic political organisations. His articulation of the issue at stake is strongly reminiscent of the conception of *low cybernetics* defended here:

> *"We need a model for understanding systems, one capable of bridging the levels that shocks operate on: physical, psychological, social and global. The key source I have drawn from is 'complex adaptive systems theory', a series of concepts used across various scientific disciplines. But this tends to be academic and impenetrable, whereas creating broad grassroots social movement requires accessibility. Efforts to translate*

these ideas into a popular idiom tend to destroy their usefulness, rendering them less as tools than as interesting facts. Rather than merely make these ideas more digestible, we need to re-mould them so that they are accessible for non-experts to take and apply.

Making radical ideas accessible means starting with what people already know. We place a wall in front of an audience if we ask them to think in cold, abstract terms like 'systems'. As explored later on in this work, language activates more than just definitions; it triggers emotions and networks of embodied knowledge. A word like 'system' links into such technical language as process, error, diagram, logic, administrator. In contrast, a word like 'body' will tend to trigger evocative and widely understood concepts like human, naked, sex, heart, soul, death. By using this more vivid, bodily language, we can make analyses more emotionally engaging." (Jones, 2018, p10-11)

This text resonates most closely with the spirit of *low cybernetics* defended here, despite Jones' work making no explicit mention of low theory. In this sense Jones' work can be re-framed as a rare experiment in *low cybernetics* (the key outcome of chapter 6).

2.3 Democratic organisation

2.3.1 Managerialism and its alternatives

As was mentioned above, at the outset of my research I set out with an interest in AOS as an area of organisation studies which developed into a focus on alternative forms of democratic organisations, particularly its novel contemporary developments. While these two starting points were far from synonymous, they both shared a common thread of opposing dominant conventions in organising which are commonly referred to as 'managerialism'. Managerial forms of organisation have been criticised on a plethora of grounds from CMS scholars since the development of the discipline in the early 1990s (Enteman, 1993; Hanlon, 2015; Grey, 2005; Prasad, 2016; Cooke, 2003; Alvesson, 2011). More recently, some CMS scholars, dissatisfied with the negative, critical character of their discipline, sought to develop a more positively oriented school of thought (while remaining resolutely anti-managerial) which centred around the identification and analysis of various non-managerial forms of organisation, which might function as alternatives to predominant managerial conventions. AOS has consequently opened up the question of organisation beyond the existing conventions which largely assume that managerial hierarchies are the best, or even the only, means of effectively structuring an organisation (Land C. and King, 2014; Parker, 2014; Parker, 2007; Land, 2014).

Although managerial structures within organisations remain the norm, during the last few decades more self-organising, non-hierarchical organisational practices have begun to gain popularity. These newly emerging ways of organising often emphasise worker autonomy and flexibility. Self-organising processes such as agile, scrum, waterfall, etc. have become something of a new norm in the tech industry (Moreira, 2017). There are a variety of writers and practitioners, even within conventional organisation studies and management fields, exploring ideas which question some of the hierarchical assumptions which previously went

unquestioned (Denning, 2010; Moreira, 2017; Dignan, 2019; Robertson, 2015; Lombardo N., 2017). In management theory and consulting, complexity theory is also gaining traction with writers like Ralph Stacey and David Snowden gaining prominence (Snowden D. & Boisot, 2000; Kurtz C. F. & Snowden, 2003; Stacey, 1992; Stacey, 2001). Many of the organisations implementing these newly emerging strategies emphasise ethical preferability as well as efficiency as reasons for the shift away from micromanaging Fordism. It is, however, important to emphasise that many of these self-organising processes do not do away with the managerial structure overall, changing the nature of their authority rather than removing it; hoping to render it less invasive in the everyday practices of the organisation, but ultimately retaining and refining managerial norms. Despite the wide range of increasingly popular alternative organisational practices even within managerial and conventional businesses, Martin Parker notes the profound lack of diversity in the subjects and methods taught in contemporary Business Schools (Parker, 2018). In his recent polemic against 'BS schools' he opposes the current reductionism of Business Schools against an alternative 'school for organising', which would explore a wide variety of possible organisational forms. This leads Parker to list a plethora of alternative organisational theories, models and practices which could be taught within such a school (Parker, 2007), and which extend far beyond the mere new conventions within business practice mentioned above. There are a number of scholars working in the area of AOS including Martin Parker, Chris Land, George Cheney, Valerie Fournier and many others (Parker, 2014; Land, 2014; Land C. and King, 2014; Parker, 2013; Atzeni, 2012). These writers give attention to a myriad of forms of organising which are excluded from business schools and the managerial status quo, providing research into worker-owned enterprises, cooperatives, communes, household organising, trade & credit unions, squatters, cartels and organised crime, immigrant organisations, and Amish communities to name only a few (Parker, 2007; Parker, 2013; Parker, 2014). The research done by AOS

researchers provide a wide range of historical precedence for considering a plethora of non-managerial organisational forms. While some of the above listed alternatives can be characterised as democratic, or at least participatory, others tend not to be.

As my research continued, I became aware that I did not want to merely research the potential impact of cybernetics on any alternative forms of organisation, but particularly those which emphasise democratic and participative practices. This led me to phrase my general understanding of democracy as existing in an organisation *to the extent that the members of the organisation determine the activity and decisions of the organisation*. While this definition was brief and ill-defined it helped me to refine the kinds of organisation I was interested in and distinguished my focus from organisational forms which are sometimes called democratic, but which continue to rely on the managerial forms of organisation which I wanted to move away from (such as indirect forms of representative democracy). This democratic orientation led me to investigate major approaches to participatory democracy, beginning with consensus processes and later moving on to consider dissensual understandings of democracy.[6]

2.3.2 Consensus democracy

Graeber, in an essay titled *Some remarks on Consensus* attempts to dispel some common misconceptions regarding consensus which are used by its critics and sometimes believed by its practitioners. Distinguishing consensus from unanimity, Graeber says that consensus

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[6] Despite this interest in collective decision-making, early in the project I carried a presumption that consensus decision-making was often ineffective and inefficient, owing to many of the alternative forms of democratic decision-making which I was investigating (and which will be discussed throughout this chapter) framing consensus as the conventional approach to democratic organising which they distinguish themselves from. Writers like Beer, Marsh, and Laloux all provide conceptions of democracy which are oriented around the effective use of group intelligence but also oppose themselves explicitly to consensus decision-making (though they all do so in differing ways) (Marsh, 2013; Beer, 1975; Laloux, 2015; Miessen, 2010). During my research, discussions with my supervisors, closer investigations of the consensus approach and writers who discuss it, and perhaps most significantly my observations from the data I gathered (particularly from PK), I was led to reassess my perspective of consensus and to question some of the claims made by its critics. While many of the criticisms against it have at least some legitimacy, I also found that many of them amounted to simplifications of the diverse set of processes and principles which consensus democracy denotes.

"*is not a system of unanimous voting, it's a system where any participant has the right to veto a proposal which they consider either to violate some fundamental principle, or which they object to so fundamentally that proceeding would cause them to quit the group*" (Graeber, 2013, p3)

Often, however, vetoes are viewed as being a last resort which inevitably causes disruption to decision-making. More common than vetoes are stand-asides, in which participants express disagreements or problems with a particular proposal but fall short of vetoing, which is to say blocking, the proposal in question. In cases where fundamental principles are not violated or a member would not be provoked to quit the group, stand-asides are the default form of dissent from a group's decision. It allows their voice to be acknowledged and their misgivings discussed without disrupting or delaying the decision-making process altogether. Stand-asides and vetoes are two mechanisms which distinguish consensus processes from the unanimity they are often caricatured as. Nevertheless, consensus processes are far from uniform and vary widely between groups. Consensus, Graeber argues, is an experimental approach which is subject to frequent adjustment and re-examination,

"*partly because situations keep changing, partly because we're trying to invent a culture of democracy in a society where almost no one really has any experience in democratic decision-making, and most have been told for most of their lives that it would be impossible*" (Graeber, 2013, p3)

Further developing this, Graeber argues that consensus does not denote a set of rules which are to be followed, but a set of principles which should be understood as guiding group discussions towards solutions which work for everyone concerned, in keeping with a spirit of democracy:

"*Some of the consensus' greatest supporters, and its greatest detractors, seem to think "consensus" is a formal set of rules, analogous to Roberts' Rules of Order, which must be strictly observed, or thrown away. This certainly was not what people who first developed formal processes thought that they were doing! They saw consensus as a set*

of principles, a commitment to making decisions in a spirit of problem-solving, mutual respect, and above all, a refusal of coercion." (Graeber, 2013, p3)

Consensus is manifested in a wide variety of processes of self-governance, most of which share the right to veto. In line with Graeber's comments, common principles of equality and freedom, enabled through a discussion based decision-making process and adapted to contextual circumstances, are far more characteristic of consensus in general than even the right to veto. 'Modified consensus', in which characteristics of the consensus process are adjusted to better fit some contexts, are also common, such as modifications to the grounds upon which a veto can be used or forgoing the veto rule altogether in favour of voting, in some circumstance (Graeber, 2013)

Polletta and Hoban discussed the origins of consensus as a popular decision-making process in contemporary political movements and democratic organisations in the United States:

> "*In the United States, experiments with consensus decision-making were undertaken in the abolitionist, women's suffrage, and pacifist movements. However, it was not until the 1960s that consensus decision-making exploded into the public consciousness. In 1962, the new left group, Students for a Democratic Society (SDS) called for a "participatory democracy" in which decisions were made by the people affected by them. SDS activists intended the term to describe a political system, not a mode of organizational decision-making. However, at the time, decision-making within SDS itself was collectivist and consensus-oriented.*" (Polletta, 2016, p3)

Elsewhere the popularisation of consensus is credited with the Quakers acting in solidarity with the civil rights movement:

> "*In the early 1960s Quakers acted in solidarity with the civil rights movement and trained many of its early members in consensus including the founders of SNCC (Student Non-Violent Coordinating Committee) … At the same time the Quaker Action Group gave birth to a national network called Movement for a New Society (MNS), which fostered both intentional communities and non-violent organizing campaigns.*" (OccupyWallSt, 2013)

Consensus persists as a popular governance process for many political organisations, social organisations, cooperatives, intentional communities, and others, and is the preferred approach to decision-making used by one of my case study organisations, Premium Collective (PK).

2.3.3 Criticisms of consensus

While consensus remains a popular approach for many democratic organisations, it also has many detractors and critics. Many writers who discuss alternative theories of and approaches to democratic organising (and are discussed at further length below) explicitly criticise consensus democracy (including some advocates of 'consent' decision-making, despite its considerable similarities). I am, however, more interested in these writers' positive alternatives than I am with their critical characterisations of consensus. Having said this, a few common criticisms of consensus frequently reappeared while reading many of the writers who will be discussed throughout this academic review (Laloux, 2015; Marsh, 2013; Rau, 2018; Miessen, 2010). Some of these criticisms also reappeared during my data collection process from my participants, as well as in other texts I considered during the research phase of my work. These criticisms included:

- *Tyranny of the individual*: some argue that the veto function gives too much power to individuals and enable them to derail the decision-making process based on personal preference. Walker provided an example of a case in which this appeared to be the case (see section 7.5.3).

- *Slow and inefficient*: it is commonly argued that consensus ends up being a slow and inefficient decision-making process in which important decisions are delayed due to an inability to rapidly reach consensus (Leach, 2016).

- *Small scale*: some argue that consensus only works for small groups and becomes ineffectual in larger groups where detailed discussion is unfeasible (see Marsh, below).

While I cannot discuss each of these criticisms, or many others, in detail here, I have found that the extent to which they hold up in practice depends heavily on the circumstances in which they are implemented and on the level of interpersonal trust held by the groups using them. My research has led me to argue that a strong level of interpersonal trust is of crucial importance for any discussion based decision-making mechanism working, as well as trust in (and knowledge of) the decision-making principles upon which the process is based. Pickard's description of Indymedia groups in Seattle is reflective of this viewpoint, arguing that:

> *"The success of consensus decision-making is based on institutional memory, constant reflexivity concerning process, and strong interpersonal relationships founded on trust."*
> (Pickard, 2006, p11)

While these criticisms and others have some grounding under some circumstances, what stood out from my reading of the criticisms articulated in some of the alternative approaches I discuss here was a certain flippantness and generalisation of consensus and its issues. Writers like Marsh and Laloux articulate interesting and, I argue, powerful alternative approaches to governance and decision-making, which deserve more attention from existing and newly forming democratic groups, but their arguments are less convincing when it comes criticising consensus. Much of the time their characterisations give a sense that they take the inefficiencies and tyrannical possibilities of consensus as a given; a presumption that I can now detect in my own initial impressions of consensus, which were not borne out by my research into its successes and not only its failures. While the criticisms made by these writers are likely to manifest in unfavourable circumstances, one should also consider its successful implementations and the circumstances which enable it to be practised effectively. To take perhaps the most levelled criticism of consensus: that it slows decision-making and is inevitably inefficient, some scholars point out the lack of empirical evidence substantiating this criticism:

"Notably, however, none of the studies claiming that consensus is slow had actually assessed how long it took to make decisions. Usually, this was because they were focused on other dependent variables, so their comments about inefficiency reflected anecdotal observations about particular decisions that were especially long, frustrating, and contentious." (Leach, 2016, p5)

These shortcomings of the criticisms against consensus have led to my interest in the below discussed alternative approaches coming from an interest in additional promising approaches to democratic collaboration, which may be more favourable under different circumstances, rather than as a dismissal of consensus. Non-consensus-based forms of participatory democracy should, I claim, be understood as additions to a toolbox of approaches, rather than held in contention with consensus. I am more interested in considering a wide range of democratic techniques and practices, and considering the circumstances which are favourable to them, than I am with defending a particular democratic protocol over others.

2.3.4 Democracy against consensus

Despite the predominance of consensus decision-making among participatory democratic organisations, there are other forms of democratic decision-making and governance which differ from it, and which I understand to be correlative with my above-mentioned heuristic understanding of democracy (see section 2.3.1). This non-consensus based, yet still anti-representative and anti-managerial understanding of democracy, I argue, is present in the below-mentioned approaches which are both cybernetic and democratic in nature (discussed in sections 2.4.3 to 2.4.7).

To introduce this notion of democracy I will discuss Meissen's work *The Nightmare of Participation* and their use of Mouffe and, more saliently, Rancière's conception of democracy (Miessen, 2010). Meissen provides a critique of the conventional understanding of political participation. His notion of participation is closely associated with its use in consensus seeking contexts, and this, he argues, too often leads to conformity and the dismissal of minority voices,

more often implicitly and subconsciously than otherwise. Nevertheless, Meissen seeks to undermine a rose-tinted view of democratic participation, while retaining a radical and democratic orientation. He sets out by describing what he sees as the dominant understanding of participation, as well as his proposed alternative view of it:

> "*participation is often read through romantic notions of negotiation, inclusion, and democratic decision-making. However, it is this often-unquestioned mode of inclusion (used by politicians as a never-ending campaign for retail politics) that does not produce significant results, as criticality too is challenged by the concept of the majority. Instead, this work promotes a conflictual reading of participation as a mode of practice, one that opposes the brainwave of the democratic facilitator, one that, at times, has to assume non-physical violence and singular decision making in order to produce frameworks for change.*" (Miessen, 2010, p13-14)

He argues that, too often, participation is used as a means of establishing a conformist group consensus, and consequently his critique can be read as a criticism of participation in a consensus-seeking mode. Against this consensual form of participation, Meissen posits an alternative understanding of participation as

> "*a way to enter politics (forcing oneself into existing power relations) instead of a "politically motivated model of pseudo-participation" (a proposition to let others contribute to the decision-making process) which is habitually stirred by craving for political legitimisation.*" (Miessen, 2010, p14)

He goes on to clarify that this position does not emerge out of a dismissal of democracy, saying:

> "*I do not propose this out of a disbelief in democratic principles, but rather out of a sheer interest in critical and productive change.*" (Miessen, 2010, p14)

Meissen invokes Rancière's work, *The Hatred of Democracy* to substantiate his argument for a more disruptive understanding of political participation (Rancière, 2014). Like Rancière, he draws attention to the ways in which a focus on political consensus can be used to actively prevent dissent from forming, which is, for Rancière, the very definition of democracy. This

leads Rancière to posit that consensus is antithetical to the development of democracy, which he understands to be associated with the interruption and disruption of existing inequitable power relations, rather than a means of legitimising them. This exposes a radically different understanding of democracy to the consensus-based one I considered above. Politics, for Rancière is the interruption of, and disruptive intervention in, existing power relations with the logic of equality of everyone with everyone (discussed in more detail in the next section). From this perspective, consensus is understood as something which attempts to cover up and weaken democratic voices by conditioning them to the consensual norms of the group. From Rancière's perspective, says Meissen, forces of consensual participation function as

> "*a critique which acknowledges something's existence* [democracy]*, but in order to confine it within limits.*" (Miessen, 2010, p87)

In Rancière we have an entirely distinct understanding of democracy which directly confronts the consented to order with the radically egalitarian voice of dissent. For Rancière, consent is a means by which democratic politics is marginalised in favour of the rule of the majority. Rather than asking how unified a democratic organisation is, we should instead ask how much opportunity there is to stray from the expected path and to question norms and leadership.

To make his alternative notion of political participation clearer, Meissen provides another opposition which underlines the shift in thinking he presents regarding dissent-based democracy. While consensus-based participation, he says, depends on the *cooperation* of its members to establish a consensus, dissensus-based participation depends instead on *collaborators*. Meissen argues that collaboration implies a more agonistic form of working together than the commonly heard advocacy for cooperation within democratic discourse and practice (Mouffe, 2000). Collaboration, unlike cooperation, requires no prior agreement on the reasons or rationale of a particular action. What is required is merely that they share an interest in an action taking place and they are willing to work together towards that action.

Collaboration requires no pretence of agreement or a common ideology to work together towards shared ends. This lowers the barriers to collective coordination and doesn't require that groups acquiesce to the viewpoints of others at the expense of their own for the sake of achieving a consensus.

2.3.5 Cybernetics, organisation, and dissent

While the development of a Rancièrian reading of cybernetics is to my knowledge an entirely novel contribution, there is a growing literature in both fields and indications of a dialogue beginning between the two subjects, specifically in relation to contemporary technologies and the blockchain (Soares, 2016; Brekke, 2019). Projects such as this show growing interest in the intersections between Rancière's work and the politicisation of contemporary technologies, though they remain firmly within the technological field. There is also forthcoming work connecting cybernetics with Rancière more directly, drawing out the relationship between Rancière's 'distribution of the sensible' and Beer's organisational cybernetics (Saker, forthcoming).

While publications directly connecting cybernetic discourse with Rancièrian politics are scant, there is plenty of contemporary academic work considering the relationship between his work and political organisations more broadly. Since this research concerns cybernetics as it pertains to democratic organising specifically rather than its technological implementations, this area of academic work intersects more closely with this project. Some scholars of Rancière, such as Hallward and Hewlett have positioned Rancière's politics as being sporadic, fragile, and intermittent, even arguing that it is inevitably *"doomed to failure"* (Hewlett, 2007, p106). Bassett has claimed that "*Rancière's overly disdainful dismissal of organisational issues surely goes too far*" (Bassett, 2014, p896). Against these anti-organisational interpretations of Rancière's politics I will later argue for the *impurity* of his conception of politics (and policing) leaving the door open to politics being incorporated into forms of political organisation

(discussed during section 7.7). During a conversation with Hallward, Rancière seemed to endorse this 'impure' understanding of his politics, leaving open the possibility of organisation and governance being thought in 'political' terms:

> '*I'm not saying you need absolutely no power. I'm not preaching spontaneity as against organisation. Forms of organisation and relations of authority are always being set up… Politics may well have to do with powers and their implementation, but that doesn't mean that politics and power are one and the same.*' (Hallward P., 2010, p199)

This attempt to think of Rancière within an organisational context is a line of inquiry that has been discussed by other scholars in the field such as Meissen (discussed above), Chambers and May (Miessen, 2010; Chambers, 2012; May, 2011). Chambers and May's accounts provide equally informative readings of Rancièrian politics within the context of organisation and governance. Chambers' conception of the *"politics of the police"* can be understood as a way of understanding the connection I will later draw between cybernetics and policing (Chambers, 2012, p85) (discussed during section 7.3.2). He describes the politics of the police as "*changing, transforming, and improving our [existing] police orders*" (Chambers, 2012, p85). This, Zizek has argued, is a truer goal of politics than the mere instantiation of politics itself:

> "*The true task of such movements lies not in momentary democratic explosions which undermine the established 'police' order, but in... translating/inscribing the democratic explosion into the positive 'police' order*" (Bassett, 2014, p895)

Continuing this argument from Chambers, *spaces of dissent* can be understood as a technique for improving police orders (understood as forms of democratic governance, *not* as policing traditionally understood (see section 7.3.2 and elsewhere)). Rancière, when asked whether politics can be institutionalised by May, distinguished between 'institutionalisation' and 'cooperatives', saying:

"The power of the people itself is anarchic in principle, for it is the affirmation of the power of anyone, of those who have no title to it. It is thus the affirmation of the ultimate illegitimacy of domination. Such power can never be institutionalized. It can, on the other hand, be practised, enacted by political collectives." (May, 2008, p173)

To which May adds:

"If this is right there can be forms of governance which sustain the equality of everyone. These forms of governance are nothing like what has been traditionally conceived under the rubric of governance… nevertheless they open the possibility of cooperative governance without betraying the one quality that entitles one to govern; that is the absence of any title to govern" (May, 2011)

These passages gesture towards forms of governance which can sustain a politics of equality, but none have gone so far as to suggest that cybernetics is the name of the logic of the police, and therefore its understanding may constitute a valuable means by which to understand 'good' governance in Rancière's thought (discussed during section 7.3.3). Although Rancière himself provides little elaboration of what his 'political collectives' might look like, May has suggested a set of organisational principles around which they should orient which closely resonate with the organisational characteristics I found at work within PK (discussed throughout chapter 7). May argues that there are two conditions of such communities developing and remaining egalitarian, the first being *"democratic composition of membership"*,[7] which he argues is best understood as forms of organisation based on friendship, rather than the dominant form of neo-liberal policing based around the relation between consumer and entrepreneur (May, 2010, p122; May, 2011). May's conception of friendship takes influence from Elizabeth Telfer's understanding of the term and is identified with (1) shared activities, (2) passionate and affectionate relationships and (3) the mutual acknowledgement of these principles (Telfer, 1970). May adds a fourth principle (derived from Derrida) which states that (4) friendship

[7] The second condition: *"shared internal institutional trajectory"*, although correlating with the oft discussed issue of purpose and directionality within cybernetics, is less relevant to the focus of this research.

involves the good of the other being sought for the sake of the other, producing a non-economic form of relation (in which equal return for one's investment in the friendship is not expected) (May, 2011).[8]

Following the spirit of writers like Meissen, Chambers, May and others, I will later show how Rancièrian dissent can be thought of in organisational terms (Barthold, 2022; Chambers, 2011; May, 2011; Miessen, 2010). Within this framework I will offer cybernetics as an appropriate lens through which to understand political organisation and its relation to what Rancière calls 'policing' (discussed during section 7.3).

Next, I will briefly discuss some existing research which has been done in developing the relationship between cybernetics and democracy. The work which links the two subjects explicitly does not go as far as to involve a dissensual conception of democracy. This is odd, since some of the cybernetically inspired alternative governance approaches discussed in the following section do outright oppose themselves to consensus, and arguably have more in common with Meissen and Rancière's dissensual notion of democracy than with the consensual one. Despite these close resonances, dissensual democracy has been entirely neglected from discussions of democratic cybernetics.

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[8] The 'passionate and affectionate relationships' characteristic of the sustenance of a politics of equality will be discussed later in relation to PK and their use of spaces of dissent (discussed during chapter 7). Although PK do constitute a kind of 'economic' relation, their organisational practices and approach to governance closely reflect May's criteria, oriented around trust and the building of bonds, and breaking down the relations between entrepreneur and consumer. As will be shown in a later chapter, PK's self-governance practices evidence not only May's claim that relationships based on trust and friendship can be emancipatory and bring about social change, but also that they are likely to result in grounded, long-term relationships, more persistent than the dominant forms of neo-liberal social relation (May, 2011).

2.4 Cybernetics and democratic organisations

This section discusses preceding research, practices and approaches which take influence from cybernetics and systems theory within a democratic context. The ideas which will be covered in this section spread across a wide variety of forms, and each one is quite unique, making up parts of a varied tapestry of links between cybernetics and democratic practice. First, I discuss the existing cybernetic research which discusses democratic practice, understood in various forms. This research had a vital influence on my project and is at the centre of the discourse which this study contributes to. It is also sporadic and limited in scope, as I will show, with a few small groups of researchers with divergent understandings of democracy developing research into its potential and actual application to a range of environments. The second part of this section will consider four alternative approaches to linking democratic practice to processes which are, in one sense or another, inspired by cybernetics and systems approaches.

I will discuss Laloux's substantial case study research and the 'teal' approach to organising which emerged from it, followed by Marsh's discussion of stigmergy as a way of understanding collaborative and democratic organising across social movements. Third I discuss Cottam's experimental design approach working to produce new, bottom-up understandings of the welfare state for the 21st century, before finally introducing sociocracy, a democratic governance approach which has become quite popular among democratic organisations in recent years, including several of my case study organisations. Each of these approaches has differing responses to the above discussed distinction between consensual and dissensual democracy. They will, I hope, give some indication of the diverse but sporadic ecology of ideas which make up democratic cybernetics.[9]

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[9] I have decided to exclude from this analysis of democratic cybernetics areas of research which primarily pertain to the governance of the state, large institutions, and forms of government which can be roughly categorised as 'representative democracy' (although it is important to emphasise many of these writers frame their work as

2.4.1 Democratic readings of cybernetics

The findings presented during this thesis fit most directly into cybernetic works concerning democratic organisations, among the likes of Espinosa, Walker, Varkarolis, Swann, Duda and others (Espinosa, 2017; Walker, 1991; Swann, 2020; Varkarolis, 2020; Duda, 2013). In particular, those within the anarchist tradition (such as Swann and Duda), those working in and with autonomous communities (like Walker and Espinosa) and those otherwise involved in political organising (like Varkarolis, Nunes, Holmes, Duda and Jones) have asked how systems and cybernetic thinking can both move away from the managerial assumptions reflected in writers like Beer, and how to extend his and others' work in developing non-hierarchical, autonomous and self-organising forms of governance (Nunes, 2021; Nunes, 2014; Jones, 2018; McEwan, 1963; Holmes, 2009; Duda, 2013). This project therefore contributes to the long-standing question of articulating non-managerial cybernetics, a debate which persists today despite its history reaching at least as far back as far as John McEwan's 1963 essay in which he distinguished between two distinct models of decision-making and control:

> "*First we have the model current among management theorists in industry, with its counterpart in conventional thinking about government in society as a whole. This is the model of a rigid pyramidal hierarchy, with lines of 'communication and command' running from the top to the bottom of the pyramid. There is fixed delineation of responsibility, each element has a specified role, and the procedures to be followed at any level are determined within fairly narrow limits, and may only be changed by decisions of elements higher in the hierarchy. The role of the top group of the hierarchy is sometimes supposed to be comparable to the 'brain' of the system.*

moving beyond representation and into more direct forms of democracy, such as Espejo and Bula, who argue for what they term 'inclusive democracy' (Bula, 2012)). These writers can be fairly characterised as pertaining to the democratic tradition but have nonetheless been excluded from this literary review due to the participatory notion of democracy followed in this thesis (Espejo, 2019; Leonard, 2006; Espejo, 2001; Renaud, 2009).

Despite these omissions, the relatively 'small-scale' focus of this research does not exclude the possibility of applying my findings to larger scale organisations in the future (due to the recursive, scale-independent nature of cybernetics), but I have nonetheless restricted this analysis to smaller organisations for the sake of bracketing complex questions of scaling which were not the focus of this study.

The other model is from the cybernetics of evolving self-organising systems. Here we have a system of large variety, sufficient to cope with a complex unpredictable environment. Its characteristics are changing structure, modifying itself under continual feedback from the environment, exhibiting redundancy of potential command, and involving complex interlocking control structures. Learning and decision-making are distributed throughout the system, denser perhaps in some areas than in others."
(McEwan, 1963)

This project can be read as continuing the tradition of articulating a conception of non-managerial cybernetics, moving through the likes of McEwan, van Duijn, Ward, Swann and others (Duijn, 1972; McEwan, 1963; Swann, 2018; Ward, 1966). This research contributes to these lines of inquiry by proposing two distinct but related means by which the technocratic threat implicit in organisational cybernetics might be undermined and resisted while also serving to disrupt this tradition by introducing considerations which have remained absent from it.

2.4.2 Cooperative, commons, and anarchist cybernetics

Most important for this research is the work done by researchers who discuss democracy in terms of cooperative, commons and anarchist organisations. Of particular interest to my project are the three in depth case studies in cooperative organisations Walker produced during the 1990s (further discussed in the next chapter) (Walker, 1991). His research applies Beer's VSM to non-hierarchical organisations, especially cooperatives and autonomous communities, and he has worked directly with those groups (along with Espinosa) to help groups organise themselves around a VSM framework (Walker, 1991). Angela Espinosa has also been an immense help during this research project. Her academic work has many similarities with Walker's, and they tend to have worked together on many of their major projects. She has also done extensive work teaching others about the VSM and democratic organising, and some of her students work in Columbian Indigenous communities will later play a significant role in

the findings which follow. She has also worked on projects concerning the commons (Espinosa, 2008). Both researchers have not only worked extensively together but have also worked on a range of research projects with other prominent scholars of cybernetics such as Leonard, Harden and Espejo (Espinosa, 2008). They have also worked in ecological sustainability and the commons (Espinosa, 2008). Much of their work concerns the VSM as a model around which to centre not only an understanding of effective organisation, but also ecological viability, two subjects which these writers understand to be tightly linked (Espinosa, 2008).[10]

Equally influential on my research has been a few writers who have worked on the application of cybernetics to anarchist organising. In particular, the work of Thomas Swann has been a great help here, although his work is by no means the earliest instance of explicit mention of anarchism's relevance to organisational cybernetics, as was mentioned above.[11] Swann's PhD thesis developed the relationship between cybernetics and anarchist forms of organisation, emphasising the historical connection between cybernetics and PAR research; a focus on autonomy, self-organisation and self-regulation; and the relationship between communications technology and radical political organisations (Swann, 2018). His recent publication of *Anarchist Cybernetics* develops these ideas in more detail (Swann, 2020). John Duda has done similar work on cybernetics, Beer's work, and anarchist organisations, and was another early influence on the development of my research project (Duda, 2013). His later work with NGOs

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[10] During our findings we will emphasise some limitations of the long-term outcomes of Walker and Espinosa's interventions in Suma and a later project they undertook at Cloughjordan ecovillage. While these findings are critical of the long-term outcomes of these projects, it is important to emphasise that both problems and their resolutions often come from these same practitioners. Furthermore, the criticisms emerged out of contextual factors which may have remained largely outside of the pair's control as consultants, such as some of the members quasi-religious commitment to the model (discussed during section 4.4.1, 8.3.2 and elsewhere).

[11] In addition to the above mentioned essay by John McEwan *The Cybernetics of self-organising systems,* other first wave cyberneticians, such as William Grey Walter, showed an active interest in both cybernetics and anarchism, and prominent anarchists, such as Colin Ward and Roel van Duijn, also made their interests in cybernetics explicit (Duijn, 1972; Ward, 1966; Duda, 2013; McEwan, 1963).

and other collectives also demonstrated a path from organisational cybernetics into non-academic forms of writing and political practice (Collaborative, 2022).

2.4.3 Four alternative organisational approaches on the boundary between democracy and cybernetics

Other writers could have been discussed during this brief section, but I have chosen to focus on several alternative approaches to organising and organisational design which demonstrate the breadth of cybernetics influence, sometimes less than explicitly, on alternative organisational approaches (Heylighen, 2016; Nunes, 2021; Hilder, 2019; Jones, 2018; Galloway, 2004; Holmes, 2009). All these approaches are explicitly non-hierarchical and democratic but may be less than overt in their association with cybernetics. Each has a unique relationship with the above discussed tension between dissensual and consensual democracy. The first two explicitly reject consensus-based decision-making, while the third endorses it (despite not talking about it in much depth). The final approach proposes consent as a preferable alternative, which will be discussed in more detail through the rest of this research. I will contend, however, that incompatibilities between these decision-making approaches are to some extent overstated, and a diversity of approaches which are sensitive to the circumstances in which these approaches thrive is likely to be more successful than one which allies itself with a single self-governance philosophy.

2.4.4 Laloux's Teal organisations

Laloux's *Reinventing Organisations* has had a significant impact on those interested in designing more effective contemporary organisational processes (Laloux, 2015). His research concerns a range of successful organisations which are governed without either the use of

hierarchy or consensus-based decision-making processes.[12] It provides both a diverse set of fascinating examples of alternative systems of governance which have proved themselves to be viable approaches, while also enabling meaningful worker participation and autonomy. I found many instances of cyberneticians and those interested in the discourse surrounding it who were excited by his research and its implications for new forms of participative and democratic organising. Walker discussed Laloux's research as one example (among many) of promising new governance systems which may help to democratise a wider range of organisations, and when I went to visit a SCiO meeting in 2019 many of its members I spoke with excitedly brought up Teal organisations and their relationship with the VSM (SCiO, 2022). In relation to the above discussed processes of consensus, Laloux explicitly distances himself from more conventional democratic decision-making, proposing instead a lower bar for the acceptance of decisions, saying:

> "*The basis for decision-making is not consensus. For a solution to be adopted, it is enough that nobody has a principled objection. A person cannot veto a decision because she feels another solution (for example, hers) would have been preferable... as long as there is no principled objection, a solution will be adopted, with the understanding that it can be revisited at any time when new information is available.*" (Laloux, 2015, p67-68)[13]

The strategies of organisation he discusses are characterised by a diversity of techniques and approaches, rather than a single decision-making process (despite the 'principled objection' criteria sounding suspiciously like decision-making based on consent, discussed below in

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[12] The research includes studies of factories, schools, healthcare organisations, and various other diverse organisational forms.

[13] Despite Laloux's explicit rejection of consensus process, it might be asked how deep this distinction really goes. This description of decision-making seems almost indistinguishable from the process used at PK, which I will discuss later, which they consider to be consensus (see section 7.4.1). The lack of 'principled objections' are characteristic of consensus processes in general, so the difference between what Laloux proposes and consensus is arguably much less obvious than he suggests. Perhaps a better description of his notion of decision-making is a modified form of consensus.

relation to sociocracy (see section 2.4.7)). One decision-making process Laloux discusses, used by some of the Teal organisations in his study, is the 'advice-process', which he describes:

> "*It is very simple: in principle, any person in the organisation can make any decision. But before doing so, that person must seek advice from all affected parties and people with expertise on the matter. The person is under no obligation to integrate every piece of advice; the point is not to achieve a watered-down compromise that accommodates everybody's wishes. But advice must be sought and taken into serious consideration. The bigger the decision, the wider the net must be cast*" (Laloux, 2015, p100)

He argues that the advice system is *"a simple form of decision-making that transcends both consensus and unilateral action."* (Laloux, 2015, p102).

2.4.5 Heather Marsh, stigmergic self-organisation

Heather Marsh is a human rights activist, journalist, philosopher, and programmer who has written extensively about mass movements in a series of books (Marsh, 2013). Reflecting Meissen's sentiment discussed above, Marsh argues that an approach to coordination which differs from both cooperation and competition is needed, and claims that her political articulation of stigmergy provides the best model of such an alternative. She argues that in general those who are opposed to a society based on competition argue for a society based around cooperation. While this is often effective in small groups of two to eight people, she claims, it is ineffective in groups of more than twenty-five participants (Marsh, 2013). Reflecting some of the arguably flippant rejections of consensus I referred to earlier, she argues that a cooperative system *"quickly degenerates into endless discussion and soothing of ruffled feathers"* and says that consensual organising *"is extremely vulnerable to agent provocateurs, and in large scale groups very seldom accomplishes anything of value"* (Marsh, 2013). Despite the caricatured image of consensus painted by Marsh, her treatment of stigmergy is significantly more subtle and, I think, proposes a more tangible manifestation of the kinds of

non-consensual governance which I introduced above in the context of Meissen. She introduces stigmergy (referring to the Wikipedia entry)[14] as:

> "*a mechanism of indirect coordination between agents or actions. The principle is that the trace left in the environment by an action stimulates the performance of a next action, by the same or a different agent. In that way, subsequent actions tend to reinforce and build on each other, leading to the spontaneous emergence of coherent, apparently systematic activity. Stigmergy is a form of self-organization. It produces complex, seemingly intelligent structures, without need for any planning, control, or even direct communication between the agents.*" (Marsh, 2013, p79)

Marsh argues that stigmergy tends to arise whenever four key criteria are satisfied: (1) many participants following one idea (2) everyone's activities are completely transparent (3) everyone can participate (at least within the "user-group"), and finally, (4) the output is free for anyone to use, adapt and improve. These criteria are again reminiscent of Meissen's description of collaboration, in which only a shared goal and a willingness to work together towards that goal are required for collaboration to take place (Miessen, 2010). Marsh points to examples of social movements, mass protests, and online groups such as Anonymous as examples of stigmergic organisations; in which the ideas and actions of its members stand in for the chemical traces left by insects, and are followed, reiterated, and reinforced in the same way. She emphasises that stigmergy has always been a part of human group organisation, stating:

> "*Stigmergy has always been with us in all of our social movements. We find it wherever a mass movement has achieved great success. Wherever you see a large group of people that have no formal method of communication and no formal organisation, but they're still all working together to one goal, this is stigmergy.*" (Marsh, 2017)

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[14] Her use of Wikipedia as a source here is telling, since the website is a successful example of a popular tool which is exemplary of stigmergic self-organisation in practice.

Marsh emphasises the advantages of an idea and action-based system which follows stigmergic organisational principles, claiming that:

> "*With stigmergy, an initial idea is freely given, and the project is driven by the idea, not by a personality or group of personalities. No individual needs permission (competitive) or consensus (cooperative) to propose an idea or initiate a project. There is no need to discuss or vote on the idea. If an idea is exciting or necessary it will attract interest. The interest attracted will be from people actively involved in the system and willing to put effort into carrying the project further, not empty votes from people with little interest or involvement.*" (Marsh, 2013, p84)

Marsh's defence of stigmergy provides a powerful visual image of collaborative coordination, which provides some substantiation to the criticisms made in Meissen's work against consensus-based systems, showing that other expressions of democratic organisation can make sense of distinct kinds of organisational activity. While her work does not make frequent or explicit mention of cybernetics and systems thinking, the traces of it are easy to detect. The application of organic and biological metaphors are a common occurrence in cybernetic writing, and other writers on the subject of stigmergy, such as Heylighen make the links to cybernetics, systems thinking and self-organisation explicit, discussing stigmergy as a coordinating mechanism in terms of goal-directed positive-feedback (Heylighen, 2011; Heylighen, 2016).

2.4.6 Hilary Cottam's Radical Help

Other notable examples of novel, non-managerial forms of organisation being designed, developed, and tested are found in the work of Hilary Cottam and her variety of 'experiments' (Cottam, 2018). She has worked on designing several organisations and tools to help them, which seek to show how new understandings of the welfare-state might be designed using non-hierarchical and democratic means of collaboration, which she argues are more appropriate, effective, and potentially lower cost than the existing struggling welfare-state

institutions. In her book *Radical Help*, Cottam describes experiments in the UK to develop novel solutions to the issues experienced by the elderly, the unemployed, the unhealthy, the young, and other groups. She describes a design-process based on prioritising building relationships and increasing people's capacities through a process of active listening (Cottam, 2018). She mentions the use of consensus in a positive light as a part of her process of design but does not put much emphasis on describing the decision-making processes she used during her experiments.

Like Walker and Espinosa, Cottam puts a huge amount of emphasis on prioritising a human focus in her work, while also coming from a systems perspective. This focus on emotional sensitivity, open listening and adaptation to the contextual needs which emerge from the contexts in which systems ideas are practised is something which came up repeatedly in this research. While her work does not discuss cybernetics explicitly, her design-oriented focus and systematic approach to design clearly reflect cybernetic design principles (Cottam, 2018). The entire purpose of her book can be understood in terms of what Pickering has called a performative cybernetic ontology, in which theories are not spoken about in abstract terms of possibility, but are constructed into real-world systems which demonstrate the principles upon which they are based (Pickering, 2010). In outlining the design process and its use of technologies and 'tools' Cottam distinguishes between those tools which are used within the design process itself from those which are developed to be used within the designed solutions. Designers and the design process, she says:

> *"provide a bridge, a way to work with technology while ensuring that we start with a human vision rooted in our lives, as opposed to the abstract wonder of technological potential"* (Cottam, 2018, p238)

The design process, she says, was developed by small groups of people she worked with who had a diverse and interdisciplinary set of skills and specialties, resulting in what she calls an

"esperanto" language which crosses all kinds of expertise and forms of knowledge. This description was deeply reminiscent of what I observed in both CK and HG, both of which are small design focused groups. Interestingly, especially in relation to a theme which will emerge during the latter part of this research (see section 8.4), she describes the use of tools as 'props in theatre', and argues that good design always tends towards being democratic, saying:

> "*Tools are like props in the theatre: they help us act in a different way and they enable a different form of being and conversing. Some tools are borrowed; others are created by the participants in the process. They are democratic: they can be used with ease by the team, families, social workers, children and the elderly. Tools and new supporting roles underpin a different theory of how change happens: not through commands or new rules, but through practice and collaboration.*" (Cottam, 2018, p228)

Her description of both the human focused approach to developing new organisational solutions to complex problems had a substantial impression on my research, and her description of a design process which can support such developments while retaining a democratic character gave me a clearer understanding of how design and democracy can speak to one another.

2.4.7 Sociocratic governance

The final alternative organisational approach I will discuss in this section is the one which had the most direct relevance with my case study organisations and research outcomes. It is also perhaps the most explicit and well-developed example of a practical approach to democratic and cybernetic governance and has gained a lot of popularity in a variety of democratic and participatory forms of organisation. There are many sociocratic schools of thought, with each of them describing it in somewhat different terms, making pinning it down to a solid definition difficult. It can be best described as a collection of approaches to governance which vary widely but share a commitment to group self-governance and a consent-based decision-making process. Consent-based decisions can be understood as a variation of consensus which

lowers the barrier for group decisions to take place, replacing the right to veto decisions with 'no principled objections' becoming the standard of a decision being rejected (reflecting Laloux's 'advice process' above). Defendants of sociocracy argue that the removal of vetoes makes decision-making smoother, more rapid and limits the power of individuals to disrupt decision-making. Sociocratic organisations also use decision-making 'circles' which are made up of a defined group of members who have a shared aim and domain of responsibility over which they have autonomy to make decisions (Rau, 2018). In larger sociocratic organisations there may be several layers of interlinked decision-making circles, each with their own members, aims and domains of responsibility (Rau, 2018). These circles are linked together via a process called 'double linking' in which each circle contains at least one member of any other circle (Buck, 2012). This is especially significant in organisations with several 'layers' of circles, making up what Rau and Koch-Gonzalez call a "*circular hierarchy*" (Rau, 2018). Double linking ensures that despite their distinct domains, circles remain in close communication with one another; vitally important when domains overlap with one another. A final important and shared attribute is the use of shared heuristic terms such as *"good enough for now, safe enough to try",* a mantra which is of central importance to sociocracy's efforts to maintain an experimental and developmental approach, open to change while maintaining a cautiousness and preference to attempt small-scale incarnations of new ideas before implementing them fully (Rau, 2018).

Buck and Villines describe the origins of the term:

> "*The word sociocracy dates from the early nineteenth century with French philosopher and sociologist Auguste Comte and appears again late in the century with American sociologist Lester Frank Ward. It remained a theory, however, until the 1940s, when an internationally known Dutch peace activist and educator, Kees Boeke, developed the first functional sociocratic system and used it to govern his residential school. In the 1970s, entrepreneur and electrical engineer Gerard Endenburg used cybernetics*

> *and systems thinking to develop Boeke's principles into a governance method that could be widely used."* (Buck, 2012, p31)

Endenburg's formalisation of sociocracy into a form of governance is an underappreciated early example of democratic cybernetics. Although sociocracy is popular today, its cybernetic roots are often overlooked. As it is practised today, sociocracy has moved on significantly from Endenburg's original proposals for it, and modern practitioners of it could easily become fluent with its language without being aware of its cybernetic roots.

Two manifestations of sociocracy stand out as being especially responsible for its recent popularisation. SoFA and Sociocracy 3.0 are both widely used sociocratic methodologies which have broadened the appeal of the approach significantly. *Many voices one Song* is a key text on contemporary sociocratic practices and was a significant source for the development of my understanding of sociocracy in this thesis. Sociocracy 3.0 provides a set of web resources (as well as consultation and other educational resources) which provide a more modular characterisation of sociocracy. Some practitioners, like Frands Frydendal, also associate other democratic governance processes such as Holacracy and Organic Organisation (O2) as offspring of the sociocratic method (Frydendal, 2020). Interestingly, Frydendal also draws attention to the need to make use of both the agreement and disagreement within the organisation to make effective use of tensions as well as synergies in the organisation (Frydendal, 2020). This will become a major theme of my final findings chapter and returns me to the above discussed tension between consensual and dissensual democracy.

Sociocracy became a significant focus of my study in part because several of the organisations I studied implemented it as their primary governance practice. CK use sociocratic governance and consider it to be a powerful proof of the potential for cybernetics to produce more effective forms of democratic self-governance. In an interesting contrast to this, some members of Suma saw their transition to sociocracy and away from the VSM as a means of escaping from, rather

than more effectively embracing, cybernetics as an approach to governance. This shows how sociocratic governance has, to a considerable extent, rendered its cybernetic roots invisible to many practitioners, an intuition which will also reappear later (see section 6.7).[15]

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[15] During the calamitous discussion at Suma of which Walker was a participant (discussed in more detail during section 4.2 and elsewhere), he considered in detail the differences and especially the compatibility between the VSM and sociocratic governance (Coulthard, 2013). While he argued that the VSM was a more theoretically complete system, he also drew attention to the preferable accessibility and brevity of sociocracy as a set of practices. For him, sociocracy, Elinor Ostrom's work, Holacracy, Laloux's teal organisations and other contemporary democratic practices are all complementary and mutually compatible, and (while the VSM is considered to be the most theoretically rigorous) he argues that differences and tensions between the models has been largely overstated by those with personal commitments to one model or another (Coulthard, 2013).

2.5 Cybernetic theory

Having briefly discussed some of the democratic applications of cybernetics which were influential on this project, I can now briefly turn to a consideration of the cybernetic texts which I considered during the process of developing my findings. This is not the place to elaborate an exhaustive list of the texts considered, or the figures, concepts and models which make up the cybernetic cannon, but it is nonetheless important to provide an overview of some key texts and concepts which contributed to the development of these findings. I will briefly mention a few of the texts which provided an overview of cybernetics and its organisational applications, before briefly introducing key concepts which were informative in this project. This will lead to the next section in which I provide a more detailed review of Stafford Beer's work, who was the single greatest influence on this project in relation to my understanding of organisational cybernetics.

Preparing for this project required that I have a grounding in the history of cybernetics and its development. This history starts with Norbert Wiener and the Macy Conferences; establishing cybernetics as an interdisciplinary science and going on to have a variety of significant impacts in both the natural and social sciences (Mindell, 2002; Malapi-Nelson, 2017). A variety of figures in the history of cybernetics were explored at the outset of my study, including key works by Norbert Wiener, Gregory Bateson, Heinz von Foerster, Warren McCulloch, Grey Walter, Maturana and Varela, Raul Espejo, Walker & Espinosa and many others (Pickering, 2010; Bateson, 1979; Bateson, 2000; Wiener, 2019; Wiener, 1988; Von Foerster, 2002; Barile, 2018; Varela, 1991; Bednarz, 1988; Kenny, 2007; Mingers, 1992; Luhmann, 1986; Ashby, 1970; Pask, 1961). As well as considering grounding texts by notable cyberneticians, historical accounts of the subject, particularly those which delve into the application of cybernetics to human and social organisations, were of particular importance. Some of those historical

accounts which provided me with an overview of the cacophony of cybernetic discourse included:

- *The Web of Life* (1996) was my first introduction to cybernetics and systems thinking. Capra provides a clear overview of cybernetics as it relates to systems sciences (Capra, 1996). This text provided my initial impression of cybernetics and began my journey to developing a passion for cybernetics and its potential democratic implications.

- *The Rise of the Machines* (2016) provides an examination of the military history of cybernetics, primarily through its US practitioners. This history lacks some important aspects of cybernetic history, including its psychiatric history and applications to human organising (failing to mention Beer's name even once) but nevertheless provided an informative history of the subject's dark origins in the military, computing and the internet (Rid, 2016).

- *The Nature of the Machine and the Collapse of Cybernetics* (2017) tracks the theoretical origins of cybernetics and attempts to account for its loss of popularity in the late 20th century. The author suggests that recent developments in complexity sciences make a return of the cybernetic paradigm appropriate (Malapi-Nelson, 2017).

- *Imaginary Futures* (2008) provides a detailed analysis by Richard Barbrook of the political uses of cybernetics during the Cold War, showing how it was used by both sides of the conflict as a discourse of modernisation, militarisation and the promise of a better future (Barbrook, 2007).

- *The Cybernetic Brain* (2008) by Andrew Pickering provides an excellent historical account of British cybernetics, particularly its roots in psychiatry (and its subsequent influence on anti-psychiatry). He provides the most in-depth overview of Beer's work that I found in historical accounts of cybernetics (Pickering, 2010).

Each of these accounts provided differing perspectives on the wide-ranging discourse which constitutes cybernetics and revealed the diverse ways in which it can be accounted for, characterised, and perceived from different discursive perspectives. Having briefly discussed a few notable historical accounts of cybernetics which were considered in the lead up to, and development of this research, I can now briefly consider a few of the notable concepts which played a role in informing the conception of cybernetics taken forward in this project. This brief introduction of a few concepts can be understood as providing a few basic lampposts to illuminate the use of cybernetics in this project.[16]

2.5.1 Control and communication

"*Control and communication in the animal and machine*" is the first definition of the subject which most who learn of cybernetics hear of (Wiener, 2019). It is unfortunate that the control aspect of the subject is what is most often emphasised and remembered, and the communicative aspect of the subject is, at times, left aside in favour of talk of command and control. While oligarchic and domineering applications of cybernetics have doubtlessly been developed and practised during its mixed history, critics of cybernetics often speak as if such expressions of it are natural to it, inevitable, or exhaustive of its history, claims which I argue misunderstand the subject to its core, as is evidenced by many of the interpretations of cybernetics discussed during this project and elsewhere. Cybernetics is sometimes talked about as though it concerns communication and control *over* the animal and machine, rather than *within* them. In cybernetics, control should be understood as something which exists internally within a system, leading to the omission of 'self-' from control resulting in dangerous misconceptions of the subject and its uses.

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[16] Such a brief overview of these key terms serves to avoid the tendency to over-specify cybernetics in this project, since an intentionally incomplete account of it is more in-keeping with the messy and discursive understanding of the subject which I have retained in this study. Such openness, I suggest, lends itself to the more creative and experimental implementation of cybernetics to democracy which I advocate in this research.

2.5.2 Feedback

Feedback is perhaps the key basic concept required to get an elementary understanding of cybernetics, defined by Beer as *"the return of part of a system's output to its input, which is thereby changed"* (Beer, 1995, p402). Feedback can be further subdivided into two basic forms. The first is positive feedback, in which an increase in output leads to an increase in the input, leading to amplification. Negative feedback is the opposite, in which an increase in output results in a decrease in the next input, resulting in a kind of 'balancing' activity which allows a system to self-regulate.[17]

2.5.3 Information

In cybernetics the word information tends to be used in at least two senses. The first is technical, emerging out of Claude Shannon's information theory; quantifying information by calculating the number of binary 'bits' which make it up. Second, more relevant to this research, is distinguished by Beer from 'data' (Beer, 1975). Data, he argues, can be produced infinitely and may be useful or useless. Information, on the other hand, is understood as "*that which changes us*" (Beer, 1975, p283). To put it otherwise, information might be defined as a "*difference which makes a difference"*, whereas data is simply any 'difference' which can be produced ad infinitum (Bateson, 1979, p229). Practicing cybernetics requires the effective use of information, not simply the production of data. In both the case of feedback and information itself the emphasis is firmly placed on *change* as the identifying characteristic which distinguishes it from its commonplace misapplication.

2.5.4 Homeostasis

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[17] Margaret Mead once argued that Lewin (whose PAR methodology is discussed below) misapplied feedback in organisational contexts, saying *"he went away with the idea of feedback as something that when you did anything with a group you went back and told them later what had happened"*. This led, Bateson added, to the popular misconception and simplification of the term in organisational contexts as simply *"telling people what they did, or answering"*, whereas the essential component of feedback is that it changes the next iteration of activity (Brand, 1976).

Homeostasis is defined by Beer as *"the capability of a system to hold its critical variables within physiological limits in the face of unexpected disturbances or perturbation"* (Beer, 1995, p402). This is distinguished from ultra-stability, which is understood as *"the capacity of a system to return to an equilibrium state after perturbation by an unknown or unanalysed force (against the intervention of which the system was therefore not explicitly designed)"* (Beer, 1995, p403). Discussions about making an organisation stable and capable of survival concern the means by which the organisation can remain homeostatic and achieve ultra-stability. The question at the base of this research is asking if these states can be achieved and sustained without intervention from 'managers' or 'bosses' and taking account of all those who are affected by the decisions at stake.

2.5.5 Meta/trans discipline

There is an interesting debate within cybernetics concerning the question of how best to describe the kind of discipline it is (Lombardi, 2015). Some argue that cybernetics is meta-discipline (to be *"higher, beyond"*) while others claim that the subject is trans-disciplinary (to *"cross over, pass through"*) (Harper, 2017). While both interpretations are merited in that they draw emphasis to the capacity of cybernetics to identify common characteristics between diverse systems, for a non-hierarchical application of the subject the latter is more appropriate. The former understanding places cybernetics over and above the disciplines which it speaks of, which is not only reflective of a hierarchical conception of how these subjects interlink but may also contribute to cybernetics being conceived of as technocratic and inaccessible, whereas I prefer to draw attention to its aspects which bring a diversity of subjects into closer proximity, enabling them to speak with one another on equal footing.

2.5.6 Law of Requisite Variety (LoRV)

Before finally delving into Beer's theoretical work, we should introduce Ross Ashby's conception of the Law of Requisite Variety (LoRV), since a huge amount of Beer's work can be understood as an extension of this single concept (Ashby, 1970). First, we must understand what is meant by variety. Variety is simply the number of possible states in a system. For example, if we had two binary nodes (A and B) which could be either on or off, the total variety would be 4 (A on, B off; A off, B on; A on, B on; A off, B off). However, any system with even moderate complexity will have a variety which is exceedingly difficult to precisely quantify due to the explosive rate at which it increases. This leads Beer to argue that in most situations calculating a precise numerical quantification of variety is unrealistic and often unnecessary (Beer, 1975). While we cannot quantify the variety of a person, for example, we know that their variety will be less than a group of five people working in tandem, and more than a computer they might do their work on. As a result, Beer tends to speak of approximating variety rather than quantifying it precisely.

The Law of Requisite Variety states that for a system to retain ultra-stability within a particular environment it must be capable of accounting for at least as many variables as exist therein. Otherwise, the system (be it an organism, organisation, a machine or whatever else) will find itself unable to account for whatever that context might bring, throwing the system into instability. For example, an experienced machine operator may have requisite variety over their machine if they understand it well and can adapt to whatever the machine does (including its malfunctions); whereas the introduction of a new unfamiliar machine would result in an explosion of new, unexpected variety which the operator would need to adapt to. In the first case the 'controller' has a higher variety than the system they control, whereas in the second new variety is added to the situation, demanding that the operator learns about the new system, which is to say that they must increase their variety over the system. This is done, says Ashby, through a process of "*destroying*" the unknown variety and incorporating it into the

controller's model of the system: in this case via the process of the machine operator learning how to operate the new machine, including its bugs and inconsistencies (Ashby, 1970).[18] The process of variety destruction/absorption can be done in one of two basic ways. First, the controller may *amplify their control variety* to take a larger number of variables into account. This is exemplified by the operator learning about their new machine. Alternatively, the controller can use their variety to *attenuate the variety of the controlled system* (which is to say reduce its complexity), thereby decreasing its variety. In my machine operator example, they might do this by only using those parts of the machine which they are already familiar with, or by turning off those parts of the machine which further complicate their work. This process of adjusting the variety in either the 'controlled' or 'controlling' system is referred to by Beer as *variety engineering* (Beer, 1993).[19]

An earlier iteration of my research findings put a huge emphasis on the concept of variety engineering, as will be discussed in detail in a later chapter (see section 6.2). This changed when the project pivoted towards a greater emphasis on articulating concepts such as these in more common-sense, untechnical language. This amounts to what I will later call *low cybernetics*. Despite resting on the notion of variety engineering less than I had at one point expected, it remains a key concept in my understanding of democratic cybernetic governance and provides a more rigorous and scientific characterisation of the arguments set out in my

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[18] Beer preferred to say "*only variety can **absorb** variety*" whereas Ashby described variety *"destruction"* (Beer, 1993, p13; Ashby, 1970, p207).

[19] To give a further example of each of these forms of variety engineering, I turn to two examples given by Beer during a filmed series of lectures in Liverpool (Beer, 1975). Using examples from marketing, Beer speaks of market research and advertising as examples of amplifying control variety and reducing controlled variety respectively. Market research gathers and makes sense of information about the environment to increase the sophistication with which it analyses its market and economic context. This increases the variety of the control system (which is to say the organisation doing the research). Advertising, on the other hand, intends to reduce the variety of the target market, encouraging them to think of particular brands, particular products, even particular problems which require attention ("my hair must be shinier, my teeth must be whiter" etc.).

third findings chapter (see Chapter 6). It also provides an example of the kind of scientific and

technical language which is common within much of the cybernetic canon.

2.6 Stafford Beer

The final research strand examined here takes an in depth look at Beer's work, as the cybernetician who this research orients around most closely. Beer wrote 10 books about the relationship between cybernetics and human organisations, as well as a variety of essays, speeches and presentations over many decades, many of which have since been posthumously published (Beer, 1994; Whittaker, 2009). While I will provide a flavour for the development of his thinking throughout his career, I will primarily focus on the work he did from the late 60s and throughout the 80s; the period in which he wrote five major books: *Brain of the Firm, Designing Freedom, Platform for Change, The Heart of Enterprise* and *Diagnosing the System* (Beer, 1995; Beer, 1975; Beer, 1993; Beer, 1979; Beer, 1985). Following my analysis of Beer's major contributions, I will discuss his stance on participatory democracy and consensus, which will leave us well poised to enter my research findings with a basic grasp of his conception of organisation and democracy. A more substantial treatment of his work can be found in Pickering's *The Cybernetic Brain* (Pickering, 2010).

It is important to emphasise from the outset Beer's critical approach to contemporary organisational and managerial practices. Throughout his works he strongly criticises the reductionist organisational assumptions of his contemporaries, spending much time exploring alternatives to the standard 'management chart', which he argued was ineffective and unethical (Beer, 1993). During his work in the 1970s he often said that he was seen by many as a *'prophet of doom'* since he argued that the institutional organisations which regulate society were woefully poorly organised from a cybernetic perspective, and that an impending collapse was inevitable if cybernetic laws continued to be disobeyed (Beer, 1975, p19). But much of Beer's work had a more positive character, proposing an unfamiliar perspective from which to look at organisations, which he argued provided scientific clarity and led to effective interventions in complex social systems.

Despite being strongly critical of the top-down managerial system which were dominant during his career, he nevertheless spent much of his time working within them. Throughout his career he shifted over the decades further and further away from his managerial beginnings, particularly following his work in Chile with Salvador Allende in the early 1970s. He continuously emphasised the importance of bottom-up organising – autonomy, participation, and democracy - but was also critical of some of the 'participatory' practices he saw gaining popularity in the 1970s (discussed below) and worked with major organisations, bolstering existing institutions. His final major contribution to organisational practice, the idiosyncratic *Team Syntegrity* method, was what he described as an attempt to produce the means of producing *"perfect democracy"* (Beer, 1994, p12) although the practical application of the method has been, thus far, less than perfect (discussed below).

2.6.1 The development of Beer's life and work

During five years of serving in the British Army, Stafford Beer trained in Operations Research, joining United Steel in 1956. During this period Beer became interested in systems theory and cybernetics, authoring several papers on the subject which led to his first book, published in 1959, *Cybernetics and Management* (Beer, 1965). Although this early work provides valuable knowledge regarding the relationship between cybernetic theory and management practice, it is mostly concerned with linear problems (such as refining a production process) rather than the organisation of people and complex communicative processes. This period of his work is significantly more calculation and machine based than his later, more human, and communication-oriented work. One of the papers published during this period outlined Beer's envisioning of an 'automatic factory', which would be entirely self-regulating through real-time communication and automated decision-making processes (Beer, 1994). The hurdles and theoretical complications which emerged from developing a theory of the automated factory were the first step in a theoretical journey which led to Beer's development of the VSM.

Years later Beer's career took an unexpected shift when he was invited to assist in the development of the Chilean socialist economy, after the election of Allende in 1970, by Fernando Flores, who had been made General Technical Manager of CORFO and tasked with nationalising Chilean industry (Medina, 2011). Soon after Beer began flying back and forth between Chile and England to work on the project, and three years later, when parts of the unprecedented and ambitious Project Cybersyn project had been completed and others were still being developed, the project was brought to an abrasive halt on September 11th, 1973, when Allende's government suffered a CIA backed military coup, leading to Pinochet coming to power and ruling over the country until 1990. The series of events that took place over these years deeply changed Beer, and significantly reinforced the more radical dimension of his thinking. He was led to give up the Rolls-Royce and suits he had enjoyed in his earlier career, buying a small cottage in Wales where he would spend his time learning yoga, writing poetry and his later cybernetic writings. He also continued many of the projects and relationships he had established prior to Chile, and wrote some of his most influential books over this time, including *Designing Freedom* and *Platform for Change* (Beer, 1975; Beer, 1993), as well developing his final major project, Team Syntegrity (Beer, 1994).

2.6.2 Introducing the VSM

Developing an understanding of Beer's thought requires familiarity with the Viable Systems Model (VSM), undoubtedly his most impactful and rigorously developed model. It claims to be universally applicable to all *"exceedingly complex"* systems - such as brains, people, ecosystems and societies - providing a general model of the conditions of these systems remaining viable (Beer, 1995). A complex system has viability if it can adapt to and survive unexpected changes in both its internal and external environment, in a way that allows it to survive and retain its organisational identity over time. Beer's claim is that any sufficiently

complex system which remains viable will do so by fulfilling systemic conditions, which he represents in the VSM.

The model itself is based on the physiological structure of the human brain, which Beer characterises as a paradigmatic example of an 'exceedingly complex system' (Beer, 1995). The overall system is separated into five subsystems which are represented by distinct parts of the human brain. I have chosen to quote Espinosa and Walker's book on environmental cybernetics, since they identify the basic functions of each sub-system in concise language and identify the part of the brain identified with its activity:

> "- *System 5 The Cortex. Higher brain functions. Organisational identity. Ultimate control.*
>
> *- System 4 Diencephalon. Input from senses. Environmental scanning. Forward planning. -Adaptation.*
>
> *- System 3 Base brain. Pons and medulla. Internal regulation. Optimisation. Synergy.*
>
> *- System 2 The sympathetic nervous system. Its function is to stabilise the activity of muscles and organs. Coordination. Conflict resolution.*
>
> *- System 1 Muscles, organs. Operations. Primary activities."* (Espinosa, 2017, p42)

What is at stake here is the claim that there are universal organisational principles at work in all complex organisations. If the VSM holds, as well as Ashby's LoRV upon which it depends, then there is a structure which remains constant (or in Beer's parlance, *invariant*) across all kinds of complex systems. This leads to the claim that we can learn a great deal from biological and ecological networks about how human organisations can be better organised. Furthermore, if we follow Beer's and to an even greater extent Walker, Espinosa, Swann and other's use of them, we are led to conclude that viable systems are radically more democratic, participatory and perhaps even anarchic than the managerialism and rigid hierarchies which predominates in human organising (Beer, 1995; Espinosa, 2017; Swann, 2020).

2.6.3 Logical hierarchies and the redundancy of potential command (RoPC)

This leads me to consider the role of hierarchy in the VSM, given that it has a five-level hierarchical structure. Perhaps the most appropriate analysis of hierarchy in human organisations comes not from Beer but from McEwan, who distinguishes between functional and logical hierarchies (Swann, 2020; McEwan, 1963). Cybernetics and systems theory assumes that systems are nested within other systems. Organs are nested in human bodies, humans within communities, many communities make up cities, cities make up nations, and so on. There is a kind of logical 'hierarchy' at work in this multi-levelled nesting, but autonomy at each level in such systems persists, and one level does not to determine the activity of the levels below it.[20]

The domination associated with hierarchy is a consequence not of the logical distinction between different systemic levels, but with the functional capacities of 'higher level' organisational systems to determine the activity of 'lower level' systems (McEwan, 1963). Such functional hierarchies are not only be morally questionable, but more to the point from a cybernetic point of view, they are most often functionally ineffective due to decisions being made from outside the contexts with which they are concerned. In natural systems logically higher order systems do not determine the activity of the systems below them; instead, decisions are made at the level which they effect (by those possessing direct information about the problem at hand), something McEwan calls redundancy of potential command (RoPC), echoing Warren MacCulloch (McEwan, 1963; McCulloch, 1965). In the context of democratic

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[20] For example, in a factory it might be said that the workers making it up are its parts, while the industrial sector the factory is a part of is logically a 'higher order' system than the factory itself. The factory and its place within an industrial sector are part of a *logical hierarchy*. The relationship between the factory and its workers, however, (assuming that the factory is run by managers following managerial convention) might be understood as *functionally hierarchical*, in that the managers can give orders to and make decisions on behalf of the workers. While the former exists throughout the natural world and is neither possible nor favourable to deny or dissolve, the latter is understood as the form of hierarchy at stake when talking about creating non-hierarchical organisations with the use of cybernetics.

cybernetics and the VSM, its five-level structure is understood as logically hierarchical but retains functional autonomy between those levels.

2.6.4 Autonomic system and Meta-system

A final important basic distinction to make is the distinction between autonomic system and meta-system (Beer, 1995). This extends what has just been said about logical hierarchies in Beer's work and draws a clear line within the five level VSM between those parts of a system which do all its basic functions, and those parts which synergise those functions and ensures that they remain in a balance with one another. The autonomic level of organisation is identified with the primary activities of the organisation, summarised in the VSM as system one (muscles and organs and in above quote from Espinosa and Walker). It includes all day-to-day activities that an organisation undertakes. These functions, respiration or sweating for example, are autonomous and cannot be 'controlled' by the brain. In terms of human organisation, Beer argues for strong democratic control at this level of organisation, repeatedly emphasising the importance of autonomy at the autonomic level of an organisation (Beer, 1995). He argues that all the organisational activity that the operational level can take care of autonomously should be dealt with by that level without any intervention from above (Beer, 1995). This, he emphasises, is how a properly functioning human body works.[21] Meta-systemic control only intervenes when the autonomic system struggles to retain autonomy and encounters pressures which require intervention from outside of that system (for example,

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[21] Autonomy can be understood as a metric of good systemic control. If a system can operate autonomously (deriving from the Greek for '*a law unto itself*' (Beer, 1975, p103)), without supervision and intervention from the outside, then it can be understood to be operating as it should be. Beer often refers to the example of the nervous system. Our respiration system works without conscious (meta-systemic) supervision, in fact, when we must think carefully about our breathing it tends to indicate that something has gone wrong, or the body is being put under some unusual physiological pressure. The normal state of operation in the body is autonomic and does not require meta-systemic intervention.

breathing problems resulting from a panic attack might require 'higher level' conscious intervention to slow the breathing or avoid the situation causing panic).

The meta-system, as was implied by the above given example, is associated with logically higher-level systems within a viable system. The meta-systemic level, being made up of systems 2-5 in the VSM, is responsible for ensuring continued viability by synergising activity in such a way that the system remains coordinated, and all sub-systems get what they require for normal functioning to continue. As was said above, meta-systemic functions only deal with that information which cannot be dealt with at the autonomic level, and each level of the meta-system is concerned with information which is irresolvable at the level below it (Beer, 1995). This emphasis on functional autonomy at each level of the VSM, and higher intervention remaining only a last resort when it cannot be dealt with autonomously, leads Beer and others to argue that observing viable systems indicate that contemporary managerial structures are rather upside-down and distorted, and provide not nearly enough autonomy at those who are doing the organisation's work most directly (the autonomic system). The intervention of management in the day-to-day work of an organisation, from this perspective, is not only ethically but, more importantly here, functionally counterproductive since managers cannot possess the relevant information to make effective decisions at the autonomic level (see RoPC).

2.6.5 Team Syntegrity work - Beyond Dispute (1994)

Beer's final major project, which led to the publication of *Beyond Dispute* in 1994, tracks the development of a cybernetic tool which aims to facilitate collective non-hierarchical decision-making in response to complex multi-faceted problems (Beer, 1994). Understanding the model in detail requires an understanding of mathematical geometry and is strongly influenced by Buckminster Fuller's geodesic domes. This places a high barrier to understanding the logic behind the process in any great depth. The project aimed to design a decision-making process which can deal with an enormous amount of variety in the most efficient and distributed way

possible. The structure had no managerial or supervisory positions and everyone involved participated equally in the process, sharing the same set of roles.[22] This model has been tried and tested in Beer's own studies and by the two firms who currently hold the trademark for the process: The Syntegrity Group and Malik Management (Malik International AG, 2018; Pellizzari, 2002; Beer, 1994). The process has also been practised by the Metaphorum group.

The mathematical peculiarity and specificity of the model has led to it being too specialised to implement on a widespread basis. According to Beer, for the process to work with maximal efficiency exactly thirty people must participate (no more, no less), exactly twelve subjects of discussion must be summarised, each participant takes on three roles, and so on. Beer argues that these numbers are important to produce resonance most effectively between the discussants. Despite these limiting specifications, some researchers such as Truss, Leonard and Cullen attempted to render these limiting specifics more flexible while retaining the model's mathematical rigor (Truss, 2000). While it is among the least easily implemented, it may also be Beer's most radically democratic idea, at least in his own words it sought to develop an understanding of *"perfect democracy"* (Beer, 1994, p12). This tension between practicality and rigorous 'perfection' will be discussed in detail throughout my findings, and in this sense the Team Syntegrity process functions as a kind of cautionary tale in the process of democratic intervention, as this research understands it.

2.6.6 Beer and management

There is an interesting tension in Beer's work which gets to the heart of my use of his writings in this project and the ambiguity of his thought in relation to democracy and managerialism. On the one hand, as was discussed above, Beer spent much of his life working as a management theorist and consultant, contributing a great deal to the subject and, even in his

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[22] Having said this, the process does require the guidance of facilitators, because of the heavily technical conceptual basis of the process.

later years, spending much of his time working alongside managers and within organisations made up of them. On the other hand, he also spent most of his life criticising managers and, especially after Chile, seems to go as far as to see them and their ways of thinking as antithetical to good organising and effective organisation, claiming that:

> "*There is simply no manager identifiable in an ecological or neurological system*" (Beer, 1975, p106)

This tension runs deeply throughout his work and, although he addressed it more explicitly as his work developed, never found a satisfactory resolution. While reading his writings, especially within *Brain of the Firm*, he seems to effortlessly swing between broadly bashing managers, calling them profoundly incompetent from a cybernetic standpoint, to casually referring to system 5 as being identified with *"higher management"*; speaking as though management's homology with the brain's cortex is obvious (Beer, 1995, p225). The phrase even takes the title of an entire chapter within the text, and his references to managers as the presumed occupants of meta-systemic functions reoccurs commonly throughout not only BotF but many of his other texts.[23]

The presumption of managerial control which can be seen through much of Beer's work can be interpreted as a situationally contingent claim when contrasted with the view articulated by Walker, who comes at cybernetics and the VSM not with a presumption of managerialism, but with an interest in extending the model to cooperative and democratic organisations:

> "*The question of who System 5 actually is has to be answered very simply as everyone involved in the system. At the governmental level it should be described as "the Will of*

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[23] Beer himself, in the second edition of *Brain of the Firm,* says that he somewhat regrets giving the book the title it has, since the VSM is not merely intended to apply to 'firms' (Beer, 1995). As I emphasised above, the VSM is supposed to be a universally applicable theory, as relevant for governments, communities, and political movements as it is for firms. This framing by Beer exemplifies his tendency to assume a basically managerial structure when applying cybernetics to social organisations.

> *the People", within the co-op it's the same and systems must be designed to ensure that's how it works."* (Walker, 1991, p48)

During my reading of his work and consideration of his positions, I have found myself sliding between, on the one hand, seeing Beer's presumptuousness about managers and management as a pragmatic choice he made in order to speak to those who he believed had the capacity to change things for the better, and on the other, seeing his perspective as indicative of a presumption that managers occupy a natural or favourable classification in organisations. Beer will claim that there is nothing resembling management within complex systems, and in almost the same breath argue that:

> *"Institutions are self-contained cells for each of which the nucleus - the organising principle called the cytoblast - is management itself."* (Beer, 1975, p131)

In either case, the ambivalence with which Beer treats management requires greater consideration when approaching cybernetics from a participatory democratic perspective. So too is a consideration of Beer's claims regarding participatory forms of management, which I will close this chapter by considering below.

2.6.7 Beer, participation, and consensus

While discussing the catastrophic hierarchical organisational strategies which were dominant while Beer wrote (and to a significant extent continue to be today), he was also sharply critical of many of the 'participatory' forms of management which were becoming popular at the same time. In his lecture entitled *Dynamics of Decision* given to the British Institute of Management, and included in *Platform for Change*, Beer argues that three major problems face the management community: technological change, societal upheaval, and perhaps surprisingly, 'participative management' (Beer, 1975). Beer distinguished between participation with and without quotation marks; arguing that he is an "*enthusiast*" of participatory governing without quotation marks included (Beer, 1975). This leads to Beer making three critiques of consensus-

based decision-making, some of which seem to reflect the flippant criticisms of consensus discussed above. First, he argued that consensus-based decision-making tended to end up with a mediocre resolution, stating:

> "*any cybernetic model of a decision network to produce a consensus is bound to home on the mediocre answer. That is, if it can produce an answer at all.*" (Beer, 1975, p286)

This led him to refer to this kind of decision-making as resulting in a *"mediocrity machine"*. In their attempts to keep all parties happy, consensus processes lead to watered-down decisions which are in no party's best interest, Beer says (Beer, 1975). Second, Beer argues that consensus-based systems result in what he calls the *"sharing all over of responsibility"*, which prevents responsibility from being clearly identifiable (Beer, 1975, p286). When bad decisions are made it may be difficult to specify where the decisions came from and how it might have been prevented. He argues that consensus decision-making can result in the abdication of governmental responsibility, arguing that it can:

> "*easily slip into a debased form, and be used as a way of avoiding difficult decisions and a way of escaping accountability ex post facto*" (Beer, 1975, p286).

Although managerial charts have very few redeeming qualities in Beer's eyes, one thing that can be said for them is that they locate responsibility clearly and explicitly, this, he says, is just about the only quality org-charts have (Beer, 1995). There is no straightforward way to do this in a consensus-based system since everyone (at least in theory) participates in the determination of every decision. An organisation with no responsibility mechanism cannot very well learn from its mistakes, or even identify how or why they were made, he says. The final critique proposed by Beer leads on from the second. Since participative systems engage in a *"sharing all over of responsibility"* Beer argues that this raises the difficulty of making decisions for everybody involved. Against this he says:

> "*what we are really after, and this I take to be the real message of the behavioural scientists, is not a sharing-all-over-the-place of responsibility, but a **driving down of the level of decision**.*" (Beer, 1975, p286) [my emphasis]

Rather than attempting to provide everyone with equal say and responsibility, the aim should be to allow those who are directly responsible and informed to make decisions which concern only them. Beer goes on to return the discussion to RoPC, introduced above, saying:

> "*(t)he trick there is that information constitutes authority… it is not that authority is divided into equal parts throughout a democracy. It is that the system can recognize the appropriate focus of knowledge for a given decision, and agrees to abide by the decision there made.*" (Beer, 1975, p286)

The first and second of the above discussed criticisms of consensus-based decision-making are, to considerable degree, guilty of the kind of simplification and caricaturing of consensus decision-making which I argued is common earlier in this chapter. I will later show in a later chapter that PK's consensus-based system delivered anything but mediocrity in its decision-making, instead using a consensus framework (coupled with the vital component of strong bonds of trust between its members) to produce creative and unexpected solutions to the considerable challenges they were faced with. Accountability too can be readily enforced by consensus-based groups by individuals or by the group in environments of high interpersonal trust and, as I will show, in spaces in which disagreement is facilitated. Furthermore, Beer's criticisms are guilty of the misidentification, referred to by Graeber, in which consensus is mistaken for unanimity. The third criticism made by Beer, I argue, is notably more substantial, and deserves a deeper analysis than this research can provide. The invocation of RoPC, defined by McCullough as *"knowledge constitutes authority"* (McCulloch, 1965, p226) states that decisions should be taken by those with 'knowledge', which I understand to mean experiential and contextually embedded information. In other words, it is those directly experiencing or experienced in a domain who should make decisions for that domain (rather than a group or

individual with a de facto authority). The argument relinks Beer's perspective to the arguments made above by Laloux, sociocratic practitioners, and others, and is in keeping with the dissensual understanding of democracy I develop through my findings. What Beer failed to account for in his criticism of consensus is the emphasis on trust, communication and mutual accountability which can curtail many of the vulnerabilities he identifies with 'participatory' management'. Such bonds cannot be established merely through effective organisational design, however, and require a social sensitivity and often a willingness to accommodate a little uncertainty, vulnerability, and an extension of trust.

2.7 Summary

This chapter has discussed a range of the texts I considered in the research phase of this work. I discussed key conceptual reference points which informed this project, discussing AOS and managerialism before moving on to a discussion of democratic forms of organisation, manifestations of democratic cybernetics, both as a field within organisation studies and as a variety of organisational approaches which, in distinct ways, draw on both democratic and cybernetic themes. Finally, I discussed the cybernetic research I undertook in preparing for this study, with special attention to the work of Stafford Beer as a key figure in the field of organisational cybernetics. Having outlined my academic research in preparing for this project we can move on to a discussion of my methodology, discussing the interviews I conducted, the approach I took and the resources I was provided access to.

Chapter 3: Messiness, low theory, and heuristics - an iterative methodology

"Common sense is the term Gramsci uses for this set of beliefs that are persuasive precisely because they do not present themselves as ideology or try to win consent. For Gramsci and Hall, everyone participates in intellectual activity, just as they cook meals and mend clothes without necessarily being chefs or tailors. The split between the traditional and the organic intellectual is important because it recognizes the tension between intellectuals who participate in the construction of the hegemonic (as much through form as through content) and intellectuals who work with others, with a class of people in Marxist terms, to sort through the contradictions of capitalism and to illuminate the oppressive forms of governance that have infiltrated everyday life." (Halberstam, 2011, p17)

"I'm thinking about it as a methodological thing, as a way of reminding ourselves that we need different kinds of theories for different critical projects, and while we might need high theory to decode and disarm the culture industry, we need low theory to criticize people who are jaded, tired, notice-hardened… who don't think anything can be different. You can't really get to those people through a very high set of cultural agendas. We need to have an exchange of knowledge, not just this idea of knowledge transfer… So low theory is a way of thinking about how we can change things." (Ryynänen, 2018)

3.1 Introduction

The previous chapter introduced the key topics being investigated throughout this text. I discussed the central research questions I set out to address and the areas of academic research which will be discussed in more detail in the following chapters. This included an overview of both organisational cybernetics, democratic theory, and a brief consideration of alternative organisations. During this chapter I will investigate the relationship between both subjects by implementing a methodology which aims to be both cybernetic and democratic in its design.

The chapter consists of four sections, discussing distinct aspects of the development of my research methodology. The first part introduces my general methodological approach, considering the major writers and practitioners who contributed to the development of my research design. I focus on four guiding concepts within my methodological research: participatory action research (PAR), low theory, heuristics, and messiness. I will also discuss my approach to data collection and elaborate the goals and intentions of the research study. The second section will outline the iterative approach my research has repeated during its development and will discuss the various stages my project went through before arriving at its conclusions. Third, I will introduce my selected case study organisations and other researchers and cyberneticians I contacted to discuss my research and findings with (as well as discussing the criteria for my participant selection). The concluding section of the chapter deals with the reflective analysis of this project. I will consider potential limitations and weaknesses, as well as discuss some of the changes I have made to resolve methodological issues which arose in earlier iterations of my study.

3.2 My methodology

To understand the relationship between cybernetic and democratic forms of organisation I chose to approach them as diverse and multifaceted discourses. Here I set out my general approach to this problem and discuss my data collection methods. The study took an multimodular approach to gathering data, drawing from a variety of written and situated sources, which were incorporated into the methodology, research, and theoretical development of my project as it took form. This diverse approach to data gathering was in-keeping with the enormous divergence of perspectives, sources, and approaches which the subjects of democracy and cybernetics incorporate. A more systematic approach would, I argue, restrict the investigation by presupposing too much about how these complex subjects interrelate in practice. While such a rigorous approach might be more satisfactory to practitioners who specialise in a singular approach to cybernetics or democratic research, it would likely be less impactful and relevant to the fields overall, since the subjects lack consensus concerning their definition or most appropriate methodological approach. With this in mind, I argue that a more open and diverse methodological approach is more appropriate when conceptualising the relationship between these two diverse and multifaceted subject areas.

Rather than progress linearly (beginning with a set plan then working through it step by step) my project began with a fuzzy overall plan which was adjusted and improved as I engaged with my data. My methodology, research and the theoretical line of argument have changed significantly as my project has creatively developed. The expected outcomes of my research changed even more dramatically. Consequently, this text has not been written chronologically since a change or discovery in one area has retrospectively altered earlier sections of the project. This adaptive and improvisational approach to my project's development is mirrored in the cybernetic archetype of the captain steering their ship towards unknown land. The path they take along the way cannot always be foreseen in advance; they improvise and adapt to the

waves as they come. While the path the ship takes will be inevitably swept along with the movements of the waves, the art of steering consists in keeping the vessel on course with its destination, even when it remains out of sight.

3.2.1 Methods of data collection and analysis.

Firstly, *textual resources* from academic experts and seasoned practitioners make up an essential component of the development of my project. They were vital for sketching out the debates and discussions at hand and formed the context in which my understandings of cybernetics and democracy were formed. As well as the texts discussed in the previous chapter, the impact of Halberstam's low theory and Rancière's dissensual cybernetics grew in significance as the project progressed and led to the development of the two major conceptual outcomes of this research: *low cybernetics* and *spaces of dissent*. Second, *multimedia resources* (audio recordings, films, and videos) provided historical, theoretical, and personal insights into the history of various democratic and cybernetic projects. During my case studies I refer to existing public materials such as websites, promotion, forums, pre-existing interviews, and so on, while also analysing the resources which I was provided access to by CK, HG and PK. Third, I gathered insights from *verbal and written communications* with several practitioners and theoreticians, with these discussions producing more personal and situated understandings of the complexities which emerge from implementing the ideas I grapple with here. These took the form of emails, phone calls and video discussions. Finally, forms of *intervention and participation* were used to facilitate several aspects of my study which involved active, hands-on work. This will be further elaborated in the following section on PAR. Due to COVID-19, however, some of the direct observations which I had hoped to carry out during my study became impractical. These limitations are discussed below. Despite this, my work with HyperGroove (HG) provided a means of engaging in a more direct PAR

type study due to my close personal connection with it, even under the difficult circumstances I found myself in.

3.2.2 Case study selection criteria.

During the early part of my project, I constructed basic criteria for finding appropriate case study organisations for my project.[24] First, I set about choosing from relatively small organisations, mostly due to the importance of understanding the internal organisational mechanisms of the organisation in detail and with relative ease, and equally importantly, analysing contexts in which all the organisations' participants could have a reasonable expectation of participating in the overall governance of the group. This not only foreclosed the difficult question of scaling democratic governance from my project (a question which I decided early on would fall outside of my general project goals) but also allowed me to analyse democratic governance at the ground level, in a direct form. I set about finding relatively small organisations with an interest in cybernetics (CK and later HG) and soon developed an interest in PK, who were in many ways an exemplary long-lasting, highly original alternative organisation. Suma and Cloughjordan joined the first group (as organisations with a history of using cybernetic organisational models) early into my data gathering process when they became key themes during my interviews with Walker and Espinosa.

With these standards in mind, four criteria emerged as guiding my case study selection:

a) A selection of small organisations where all members could reasonably participate in the general governance of the group.

b) Several organisations who had experience or interest in organisational cybernetics.

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[24] These criteria also retained some amount of flexibility and were subject to alteration, primarily in response to new opportunities emerging which gave reason to incorporate new emphases into the study (for instance my involvement in HG, which provided opportunities for more autoethnographic self-reflection during the project).

c) I wanted at least one alternative organisation with a very heterodox and unusual organisational philosophy, irrespective of their interest in cybernetics. The contrast between (b) & (c) would provide a comparative perspective on alternative means of organising and would provide a critical example of how practitioners can produce viable alternative organisations, whether within or outside of a cybernetic paradigm.

d) Later I was invited to join HG, which provided a case study that satisfied (a) and (b) but also provided both the opportunity to look from the inside at organisational dynamics and investigate the earliest stages of organising in which a groups orientation and initial structure are developed. As my original PAR plans with my case studies became stifled by the pandemic, my involvement with HG provided an opportunity for autoethnographic as well as PAR based study, adding a new dimension to my research.

Excluded from these criteria were, firstly, larger democratic organisations, especially those with representational or bureaucratic decision-making processes. The most central exclusionary criteria in my study, however, were those organisations which were run primarily or exclusively in an oligarchic mode, where an individual or small group within the organisation (say a CEO or board of directors) had primary or total decision-making power within the organisation.[25] Democratic groups, as I conceived of them, were those in which the main decision-making group was made up of active members within the organisations, and in which all members were capable of participating in shared governance. Connected to this, my focus on direct and participatory forms of democracy excluded representational forms of democracy from my study, in which participation is limited to voting for representatives of stakeholder groups within an organisation.

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[25] During the early part of my project, I had considered investigating a London based tech company who discussed autonomy-based work practices and democratisation, but which I later moved away from due to the active involvement of the company's CEO in the company's direction, and the lack of democratic ownership or decision-making power within the organisation by its members.

3.2.3 Methodological outcomes.

The outcomes of my research emerged from the creative combination and fusion of my varied resources and cast study organisations (discussed in section 3.7). This broad plurality of data sources provided a multi-dimensional mapping of various theories, figures, organisations, and practices which were fused into an image of the multi-faceted relationship between democratic and cybernetic organisation. Importantly, the ideas and interpretations I cultivated from these observations were discussed and developed through engaging with my participants and discussing my ideas with them as they took shape. While it was often difficult to articulate my incomplete thoughts on the diversity of sources I was considering, this feedback from participants was vital for the development of my project. Particularly discussions with Walker, Jack and members of HG were central to the development of my findings. This peer-based process of feedback was repeated iteratively throughout my study.

3.3 Methodological approach: PAR methodology, low theory, heuristics, and messiness.

Here I discuss four key concepts guiding the development of my methodological approach throughout this project: PAR, low theory, heuristics, and messiness. First, I discuss participatory action research (PAR), a methodological approach which has been commonly used in cybernetic studies focused on human organisations. Following this, I discuss low theory as an approach developed through the work of Jack Halberstam, McKenzie Wark and Stuart Hall (Halberstam, 2011; Wark, 2015; Hall, 1991). Investigating these approaches to research helped in the development of a methodology which emphasises clear and coherent communication among non-specialists, which I argue is appropriate for my study given its emphasis on producing results which are relevant for non-specialists and practitioners, as well as those academically invested in cybernetics. Heuristics became a key means through which the clear and concise communication style I was observing manifested in the organisations I considered. The significance of 'messiness' in my project became clear during my data gathering phase, in which dealing with a mess of sources, perspectives and responses was not only something I was dealing with in my attempts to process the data I was gathering but was also a central theme of the work of the organisations I was investigating.

3.3.1 Participatory Action Research methodology (PAR)

Participatory Action Research (PAR) was developed out of the work done by sociologist and cybernetician Kurt Lewin, who was a participant at the Macy Conferences, where the science of cybernetics was developed. Lewin's reflection that *"you cannot understand a system until you try to change it"* (Lewin, 1946; MacDonald, 2012, p1) bears the mark of both a cybernetician and a sociological researcher committed to precipitating organisational change.

MacDonald introduces PAR as:

> *"a subset of action research, which is the "systematic collection and analysis of data for the purpose of taking action and making change" by generating practical knowledge... Ideally, the purpose of all action research is to impart social change, with a specific action (or actions) as the ultimate goal".* (MacDonald, 2012, p2)

PAR seeks to engage its participants in *"the design and conduct of all phases (e.g., design, execution, and dissemination) of any research that affects them"* (Vollman, 2004, p129). It is often described as a democratic form of inquiry by researchers (Swann, 2018; MacDonald, 2012), which *"liberates research from conventional prescriptive methods, and seeks to decentralize traditional research"* (MacDonald, 2012, p3). PAR advocates that the researcher develops their research project alongside the organisation(s) under consideration, and therefore no single process for conducting PAR can be summarised; every study is different depending on the participants one is working with and their own contributions, interests and needs – as well as the circumstance they find themselves in. It prioritises producing situationally relevant information for the group under analysis, rather than disinterested or reproducible results. Here I will briefly discuss two quite different PAR projects. Both concern the impacts of cybernetics on distinct types of participatory organisations (one cooperative and the other anarchist). Both projects developed very differently, due in part to the different relationships the researchers had with the participants in their study.

3.3.2 Walker's PAR studies in cooperative organisations

Jon Walker conducted several involved and time-consuming PAR studies with democratic organisations over around five years (Walker, 1991). He studied three cooperative organisations which varied in their organisational practices and size, and he both observed and intervened in their organisational processes, though differently in each case. He was able to work quite closely alongside two of the three organisations and assist them in implementing a VSM design structure. The third organisation, Mondragon Cooperative, is a gigantic organisation where he did not attempt to implement the VSM. He did, however, argue that the

Mondragon's structure already reflected the structure of the VSM effectively. Walker's status as a member of the other two organisations he investigated provided him with deep access to the organisations and the capacity to intervene in their (self-)governance during his research. This was due to him being a participating member of both organisations. His experience as an organisational consultant and his pre-existing relationships with the organisations resulted in a comprehensive and informative example of PAR methodology in practice. One of these organisations, Suma, will be discussed in more detail in my findings. Walker's work shows how the required time, resources and interpersonal connections can lead to effective studies which significantly informs and changes an organisation's way of structuring itself, as well as producing valuable academic insights. His project also shows that Beer's VSM framework can be applied effectively to cooperative and participatory organisations.

3.3.3 Swann's PAR studies in anarchist organisations.

Swann's initial research plan had hoped to conduct a roughly similar study to Walker's, applying a PAR approach to an anarchist, rather than cooperative, organisation. He intended to take a research plan to an anarchist organisation in the Netherlands, developing and implement it with them. Unfortunately, Swann says:

> "*[t]his hit a major hurdle very early on when the responses from the group were both fewer and far less positive than I had expected. In fact no one was enthusiastic about the project and many comments focussed on rejections of social media as a tool for activism and not at all on the proposed participatory education workshops or other aspects of the plan, effectively scuppering the PAR project before it had even left port*" (Swann, 2018, p73).

Swann's experience demonstrates that a full-scale PAR project requires strong interpersonal links between the researcher and their case-study organisation. Swann argues,

> "*One possible reason that my attempt at instigating a PAR project failed is that I lacked the access, and perhaps even the influence, in the group in question to elicit*

> *cooperation... ultimately we lack the 'social capital', for want of a better word, to propose things like PAR projects and participatory education workshops.”* (Swann, 2018, p73)

In response to this pushback, Swann revised his proposed project significantly to take account of his low level of "*social capital*" (Swann, 2018). Rather than producing one in depth PAR approach with a single organisation, Swann opted to conduct a variety of interviews with members of many radical political groups throughout the Netherlands, conducting in-depth semi-structured interviews with them. Swann describes this revised approach as a *"participatory political philosophy"* project, in which the discussions aim to co-produce knowledge with interview participants by inviting them *"to co-lead the conversations, rather than me repeatedly pushing certain questions"*, an approach which Bourdieu refers to as *"non-violent listening"* (Swann, 2018, p77). This focus on the co-production of knowledge has had a considerable influence on my project plan since, like Swann, I lacked the *"access"* to successfully propose an elaborate PAR project with all but one of my case study organisations.

These two examples of PAR studies present two distinct approaches to conducting research which are both appropriate for their differing contexts. Walker's research shows how a PAR study can be conducted by a researcher who has a significant level of trust with the organisation under analysis, while Swann's work demonstrates how PAR can be conducted with organisations when the researcher does not have such a close connection as a perceived 'insider' with that organisation. Both are highly relevant to my project, as I will conduct investigations of several organisations which I have relatively weak bonds with, as well as one organisation of which I am a member (HG).

3.3.4 Approaching cybernetics from a democratic perspective

My work, like several other cyberneticians, aims to use cybernetics in a way which is helpful and productive for participants in democratic organisations. Since my intention is to consider

how cybernetics might enable members of democratic organisations to organise *themselves* more effectively, I consider the most rigorous and scientific aspects of cybernetics to serve in this text primarily as allegories, metaphors, or heuristics to guide democratic participants towards more effective communication and coordination with one another. The reasoning behind this opposition between scientific language and democratic communication will become clearer during the next chapter, when the notion of *participatory clarity* is introduced (discussed during section 4.3). As I will show, this question of usability, technicality and accessibility will become a major theme of the research outcomes which follow.[26]

This realisation led me to a significant revision of my project's methodological goals. In the first iteration of my methodology I had hoped to produce a set of preconditions for implementing what I called 'organisational democracy', while my revised approach recognised that this set of preconditions would likely be too technical, inaccessible and specialised to be effectively implemented in organisations run by their participants.[27] Having realised that my project was in danger of producing inaccessible and ineffective conclusions, if I continued to frame it in such scientific and specialised language, I began to look for areas of theory, discourse and organisational studies which emphasised the opposite: conversational, non-

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[26] This appropriation of cybernetics discourse does not mean to dismiss or undermine the scientific underpinnings of cybernetics as a discipline. Rather, I argue that any cybernetics which intends to facilitate and enable 'rule by the people' cannot be framed in language which is obscure and inaccessible to most people's understanding. The cybernetics of effective group coordination requires that the *communicative* aspects of the subject be emphasised over its capacity to exercise *control* over complex systems; and clear communication among non-experts requires an emphasis on ease of understanding and clarity over rigour and precision.

[27] After considering the possibility of articulating an 'organisational democracy' I also considered a second possible project outcome. As I further investigated the usefulness for heuristics in both democratic organisations and cybernetic theory, I developed an interest in the production of more usable set of 'practical heuristics'. These practical heuristics would take the form of a 'toolkit' of simple ideas or concepts, derived from both my observations and influenced by cybernetic conceptual tools, to help organisers to envision and implement cybernetics more concretely and democratically. During the data gathering phase of my research, I became more focused on producing outcomes which emerged directly from the data I was gathering, and its implications for the future development of democratic cybernetics. As I moved away from this idea and delved into the data I was working with, a focus on heuristics faded from central priority and became just one of many themes I was exploring. However, as I will later show, heuristics re-emerged towards the end of my study as the missing piece to make sense of the varied resources I had encountered. Despite this change of course, the production of a set of practical organisational heuristics remains a promising avenue of future study.

technical, 'common' language. Two areas of discourse were appropriate methods for this approach to research: *low theory* and the use of *heuristics*. *Messiness*, while not an established term in either the cybernetic or democratic cannon, also became a significant methodological theme throughout my study, in part because of the rich complexity of the data I was considering, but equally because of my observation that this messiness was equally reflected within the democratic spaces I was considering. These approaches can be understood as being selected with the intent of translating the scientific concepts found in cybernetics into a more accessible and practical methodology: a discursive approach I will later call *heuristic language* (see section 6.5). While these themes were identified early into the development of my research, I will later show how easily such lines of thought can be left aside and lost sight of, when I discuss a tangent my findings write-up took which led me astray from these methodological commitments (see Chapter 6). We will also see how this tangent, and the mess it created, ended up bringing my findings full circle and benefiting my research significantly.

3.3.5 Low theory

Several theoreticians have discussed their work as being what they call *low theory*, particularly Jack Halberstam and McKenzie Wark (Halberstam, 2011; Wark, 2015). Both writers were influenced by the work of Stuart Hall regarding this approach (Hall, 1991). Halberstam, in the introduction to his work *The Queer Art of Failure* identifies low theory as:

> "*precisely one of these modes of transmission that revels in the detours, twists, and turns through knowing and confusion, and that seeks not to explain but to involve. So what is low theory, where does it take us, and why should we invest in something that seems to confirm rather than upset the binary formation that situates it as the other to a high theory? Low theory is a model of thinking that I extract from Stuart Hall's famous notion that theory is not an end unto itself but "a detour en route to something else"... we can think about low theory as a mode of accessibility, but we might also think about it as a kind of theoretical model that flies below the radar, that is assembled*

from eccentric texts and examples and that refuses to confirm the hierarchies of knowing that maintain the high in high theory." (Halberstam, 2011, p15-16)

The approach encourages, rather than cowering away from errors, tangents, improvisations, and detours, as well as endorsing heretical forms of knowledge which reject and reappropriate established conventions in the interest of producing radically ulterior accounts. In this sense the orientation of low theory inverts the expectations and standards of conventional cybernetics as a rigorous scientific discipline, turning it on its head. Low theory directs itself towards the kinds of accessible, non-exclusionary forms of research which my project hopes to emulate. Furthermore, it emphasises a free and exploratory approach to discourse, troubling the distinction between 'high' forms of theory and their 'low' other.

3.3.6 Heuristics

Persisting throughout my research was an emphasis on heuristics, both as it is understood within cybernetics and in a more general (or *heuristic*) sense as simple rules of thumb, or shorthands. Influence was taken from this concept not only as a tool which walks a line between high and low theory, holding meaning in both a colloquial sense and as a theoretical concept with more precise meaning.

Organisational heuristics have been the subject of a large body of research, both affirmative and critical, and can be most simply split into two key factions within the literature (Loock, 2015). On the one hand, many researchers emphasise the biases and errors which can emerge from heuristic approaches to decision-making, this body of research is often called *heuristics-and-bias* research (Oliver, 2002). On the other hand, heuristics are defended and commended by many researchers for their fast, low cost and relatively reliable results, earning this body of work the title of the *fast-and-frugal* paradigm of heuristics research (Loock, 2015). Heuristics have several benefits as decision-making guidelines. They are particularly suited to complex problems in which limited information is available (sometimes even benefiting from less rather

than more information (Oliver, 2002)); they take little time and little effort to apply; communicate generalisable ideas easily and clearly; and tend to improve over time as more information is gathered (Bingham, 2011). While many prominent decision-making models prioritise a model's ability to satisfactorily account for all the existing data available, heuristics divert from this approach, instead focusing on 'generalisability'. According to Gigerenzer, the goal of generalisability is to

> *"predict the statistics of new, as yet unseen, samples generated by the mental process being studied.... Simple heuristics are capable of achieving accurate results in predicting new data, which is often referred to as robustness"* (quoted in Loock, 2015, p1).

Within cybernetics a distinction is often made between algorithms and heuristics. The former Beer describes as *"a comprehensive set of instructions for reaching a known goal"* and compares it to a cook's recipe (Beer, 1995, p401). He contrasts algorithms to heuristics, understood as *"a set of instructions for searching out an unknown goal by exploration, which continuously or repeatedly evaluates progress according to some known criteria"* (Beer, 1995, p402). This, he illustrates with the process of ascending a mountain:

> *"Suppose you are trying to reach the peak of a conical mountain enveloped in cloud. It must have a highest point, but you do not know the compass bearings. The instruction: 'keep going up', will get you there, wherever 'there' is. That is a heuristic."* (Beer, 1995, p52)

Others, such as Gigch draw a distinction between heuristics and 'rules of thumb' saying:

> *"A rule of thumb usually has no analytical foundation and has been developed on the basis of intuition and long-time experience… Heuristics to replace them, will probably start from the rule of thumb and develop on the basis of a solid and rigorous analysis of the problem and the factors involved. Heuristics are methods "to reduce search""* (Van Gigch, 2013, p205)

Despite this distinction, this project will blur the line between the cybernetic understanding of heuristic and the more colloquial notion of 'rules of thumb'. This is in-keeping with the more intuitive, improvisational approach to language which I contend is more appropriate within democratic domains, as it allows us to draw influence from more rigorous cybernetic concepts while extending them with metaphor and abduction into a democratic and less analytically oriented terrain.

Heuristics have been an important aspect of my investigation of cybernetics and democracy for many reasons. First, the emphasis on technology and the development of governance *processes* within cybernetic discourse has tended to predominate within existing works, whereas I have sought to bring to the fore the dimensions of cybernetics more closely related to everyday human communication (discussed further in Chapters 4 & 7). This is more in-keeping with the notion of democratic organising around which this research has been oriented and has been insufficiently investigated in both democratic and cybernetic discourses. Second, an emphasis on heuristics is aimed at dealing with the perceived inaccessibility and complexity of cybernetics, a key theme which runs through my research findings. This, I hope, will contribute to cybernetics becoming less rigidly associated with computation-based systems and rigorous scientific language, leading to it being more commonly utilised in contexts of person-to-person interactions and embedded within social spaces themselves.

3.3.7 Messiness

An equally central aspect of my research methodology is messiness: both in the sense of an approach to gathering data and following thematic trails, and as an observed way of working by the organisations I studied. While an attentiveness to messiness is readily explored in the low theory of the writers discussed above, the theme is something which emerged from my work without having a single point of origin. Initially messiness became methodologically

appropriate because of how I planned to gather data about my study's subjects of interest, since I did not want to close the discussion around predetermined and reductive conceptions of the constellation of ideas I planned to investigate. This, I understood to be not only appropriate within the specific fields I was investigating, but good methodological practice in any exploratory practical research. As argued by Law,

"In practice research needs to be messy and heterogeneous. It needs to be messy and heterogeneous, because that is the way it, research, actually is. And also, and more importantly, it needs to be messy because that is the way the largest part of the world is – messy, unknowable in a regular and routinised way" (Law, 2010, p2).

Accumulating a 'mess' of sources and ideas, sifting through the complexity of the subjects and their inter-relations, gave the complexity of democracy, cybernetics, and their relationship the subtlety and indeterminacy that the subjects demand. Articulating coherent findings out of this mess of considerations would be more challenging but more likely to produce outcomes which were true to the subjects at stake, particularly in a PAR context (Fitzgerald, 2021). The cleanest and most tidy framing of such subjects may make for less ambiguity in a text, but they arguably sacrifice the complexity, subtlety, and ambiguity which characterises these subjects as they manifest in real world contexts. Such contexts are never unambiguous and are rarely (if ever) as smooth-running and clear-cut as rigorous definitions imply.

This cognisance of messiness became more central to my study as my data gathering progressed and the messiness of existent democratic decision-making became increasingly obvious. Organising as a democratic group, and accounting for the variety of perspectives within such groups, involves a mess of influences, perspectives, interests, and biases. Any attempt to incorporate an inclusive variety of these viewpoints is bound to result in a mess of implications and possibilities. To cover this messiness within a restrictive methodological frame is not to eliminate it, but simply to brush it under the rug and consequently obfuscate

the complexity of the situation at hand (Law, 2010).[28] With these observations in mind, when confronted with Mol's question of what kind of politics to engage in, this project stands distinctly on the side of messiness:

> *"there is the question of what kind of politics to engage in: one of setting standards or another that, convinced of the messiness of the nonconforming world we live in, seeks better ways of handling it."* (mol, 2002, p100)

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[28] Furthermore, the tendency to deny, evade and foreclose organisational messiness is likely to result in (1) the development of bureaucratic formalities which squeezed creativity and inventiveness out, or otherwise form (2) rigid hierarchies to restrict the variety of voices in contention. These two means of undermining organisational messiness are often as successful in keeping it at bay as they are antithetical to democratic organising.

3.4 Step by step case study process.

The development of this project can be understood both as an iterative and progressive study. Throughout its development, it has gone through a (1) repetitive cycle of analysis, interpretation, and feedback, while at the same time it has developed into a (2) progressive plan to undertake research within the time limits assigned to the project. Since the work can be understood both cyclically and progressively, I will briefly summarise the project in terms of both.

3.4.1 Iterative outline of study.

The general approach which has been taken by this project, from its outset, can be understood as iterative, as a result of its cybernetic orientation. Coming into this project I had an idea of the subject areas I was invested in and intuitions about the kinds of relationships between those ideas which I was interested in investigating. I did not, on the other hand, have a clear and complete understanding of the specific research questions I wanted to answer (although I did have an initial formalisation of them), nor had I considered many of the materials that would end up being instrumental in the project as it developed. Despite these ambiguities, due to cybernetics being a constant anchor within my project, from the outset I saw my project as an iterative one which would uncover its identity through a process of exploration, a process which would repeatedly cycle back to its point of origin, changed by the materials it encountered along the way.

We can look at the development of this thesis as a complex cybernetic system. It can be understood in terms of its inputs, processes, outputs, and feedback. The project's *inputs* include the information which has been considered in the development of the study: the books and articles considered, the people who I have discussed it with (both formally and informally) and the case studies I have undertaken. The project's *processes* involved all the work I have done

throughout this research to interpret my findings, make connections between my wide-ranging research subjects, and conceptualise the implications of that research for my project. The *output* of the project is the thesis you are currently reading (as well as the many rejected iterations of it). The *feedback*, finally, are the interpretations, critiques and recommendations made by various people throughout the development of this project, both formally and informally. Below I will underscore the three stages in this iterative process. The final output of this project is not included as a part of the iterative cycle, since it marks the end of the process which brought the project into existence.

> *Analysis*: from the outset of this project, I have engaged with a range of commentators, theoreticians and practitioners relating to cybernetics and democratic organisation, based on both textual and situated sources. From this varied data I have selected the information most relevant to my research questions, which has been refined and re-imagined throughout each iteration of this process.[29]

> *Interpretation*: having compiled and logged relevant information, I sought to incorporate it into my overall project, by tracking its implications for my research questions and relating those materials to the others under consideration. Identifying patterns, relationships and hypotheses are essential for the ongoing and iterative development of this project. These have taken the form of notes, summaries, and articulations, as well as the earlier iterations of the chapters which make up this thesis. A wealth of paths were considered, discussed, and diverted away from, some of which cannot be discussed here.

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[29] This refers to the information/data distinction discussed in the previous chapter. To put it in Bateson's terminology; data can be understood as any 'difference' whatsoever, whereas information is understood as only those differences which 'make a difference' to my project. (Bateson, 1979; Beer, 2019)

Feedback: Throughout this project I have requested and received ongoing feedback from several interlocutors, both formal and informal. Formally, I have sought feedback through discussions with practitioners and experts, as well as considering a plethora of critical textual sources. Informally, I have been deeply informed by the casual exchanges and discussions among friends and those with resonant interests, as well as chance encounters with subjects not directly addressing my subject of enquiry, but nonetheless leading to significant and often unexpected developments in my thinking.

3.5 Progressive Outline of study.

3.5.1 Phase one: Research phase.

The research phase of my project was primarily the focus for my first year of study. There were three primary points of focus during this phase of my project: textual research, contacting people & organisations of interest, and developing my methodology. The priority for my research when I set out was to gather a range of contextual information about the subject areas surrounding my research questions. This involved the analysis of a wide variety of academic sources from a range of specialities, some of which are discussed above. The second major objective was to contact the three organisations who I hoped to include in my case study research (discussed below). I also contacted several experts in various areas relevant to the focus of this study. Towards the end of the first year of study I encountered HyperGroove (HG) who would become an additional case study with a unique status in my project. This development led to changes in my methodological approach, as HG afforded opportunities in my study which the other organisations did not and demanded a more involved research approach. By fusing together this broad array of research I was able to develop an initial iteration of my methodological approach by the end of my first year of study.

3.5.2 Phase two: Case study stage

The case study and data gathering phase of my research was the primary focus of my second year of study, although it builds on the contacts made during my first year. This phase had three notable stages, which were designed to be repeated iteratively to further refine and improve my findings. The first part of my case study process involved *gathering data* from both case study participants and experts in relevant fields. The first iteration of this phase involved conducting interviews with my case study participants and considering textual resources which will be discussed in the chapters which follow. During this time, I made note of my thoughts about the data I was gathering regularly in the form of a research diary, taking

note of themes and interpretations, future lines of enquiry, and so on. The second stage involved the *analysis and interpretation* of the data I gathered. This involved the cataloguing and tracking of my case study research, as well as exploratory interpretations of the data which served to fuse the various sources making up my study. The third stage of this phase involved *gathering feedback* from academic peers and participants in the study; inviting them to critically analyse my project.

3.5.3 Phase three: *Reflective analysis and write-up*

The final phase of my research focused on reflectively analysing my findings and constructing its conclusions into a coherent final project. This phase revolved around *integrating my research*, writing them up and refining them to create an easily understood analysis of the relationship between democracy and cybernetics. This involved constructing an initial iteration of my entire project, drawing together the themes and discoveries developed over the first and second year of study. Over several iterations I integrated my research into a final write up, repeating the integration of data and clarification of ambiguities through several iterative cycles. I wrote my findings up over the course of my third year while continuing some of the informal discussions with participants which had continued throughout. As will be discussed later, during this time I chose to rewrite one of my finding's chapters, having found a more appropriate way to frame the findings, more closely in-keeping with my methodological approach.

3.6 Case study selection and access to data

A large part of my research was dependent on the feedback and communication I attained from those with relevant expertise in the fields which my project concerned. This led me to consider a range of experts who offered specific insight into those fields, particularly those who stood at the intersection between them. While a few of the academics and groups discussed below specialise in either alternative organisations, democracy, or cybernetics exclusively, most of them have engaged in research which incorporates features of democratic organisation within a cybernetic framework.

These diverse sources required different attitudes in my approach to collecting and interpreting the data I gathered from participants, due to the range of knowledges and subject positions taken up by my different interview and case study participants. Vitally, consideration of types of knowledge and experience held by the participants was important to conduct interviews and accurately interpret the data provided by them. The academics I spoke with had extensive knowledge and experience with cybernetic theory and its implementation within participatory contexts, for example, whereas my case study participants tended to have less proficiency in cybernetics, but more practical experience of the nitty-gritty complexities of democratic organising. In both cases I was often interacting with people who had far more experience and expertise than me within their domain of speciality. This led me to take a responsive stance to my interviews, following the lead set out by my participants when discussing their areas of speciality, while remaining within the thematic guidelines set out by the project. At the same time, I drew on my other sources of data to approach expert testimony critically. While following the lead set out by expert interviewees, I wanted to introduce critical perspectives on their work from other data sources, when appropriate. In this vein I tried to balance a line between learning from experts who undoubtedly had far greater experience than me in their respective fields, while also approaching their statements with a critical eye, analysing their

perspectives with a mindfulness of the other outlooks and experiences I had come across elsewhere in my data gathering process.[30] This led to a kind of ambivalence with regards to experts and practitioners in my study, as I sought to follow the lead set out by my interviewees, but also to strategically intervene in discussions with alternative perspectives which I had come across elsewhere during data collection.

I will briefly introduce some of the experts I reached out to during the undertaking of this project and will consider both their relevance to the project and the areas of interests I had in speaking with them. I will then discuss the case studies I selected in accordance with the criteria discussed above (during section 3.7).

3.6.1 Discussions with academics

Thomas Swann has written about the relationship between cybernetic and anarchist organisations and was discussed above. He was one of the first researchers I spoke to extensively about the relationship between cybernetics and non-hierarchical organisations, and his insights (both in his published work and our conversations together) were instrumental in this project's development. John Duda was similarly influential on the project, and although I did not speak with him personally his writing on the subject was similarly informative. I also spoke with Orestis Varkarolis, who Swann kindly put me in touch with (Varkarolis, 2020). He conducted research on the use of the VSM in democratic contexts and considered how viable the approach was to those kinds of organisations. He found similar problems to Swann regarding the communication of the ideas to democratic, cooperative groups and emphasised

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[30] At other points during data collection, I felt I was being perceived as an authority or expert within the domain of cybernetics, and especially during my discussions with members of CK (who had a keen interest in cybernetics and its application to organisations like theirs) I found myself being perceived as more of an expert in relation to cybernetics than I had expected. As I mention below (in section 4.1.3) I did not always feel capable of providing the kinds of down-to-earth, practical answers which were asked of me during those discussions.

the emotional and interpersonal hurdles to incorporating the model despite its rigor and coherence.

Trevor Hilder is a British cybernetician who has worked extensively with the VSM and was a friend of Beer. He has applied Beerian cybernetics to businesses and new economies, particularly aspects of blockchain technologies and mutual credit systems. He has also sought to spread the understanding of the VSM to a wider-range of organisational practitioners by providing a one-day course on the subject. Additionally, Hilder and HyperGroove were in contact prior to my consideration of his work. He and I had an interview together regarding my research and I, along with the members of HG, joined him on his course introducing the VSM and his Moral Modalities Framework (MMF) which supplements the model to make better sense of social systems (Hilder, 2019).

Jon Walker, Angela Espinosa, Raul Espejo, Allenna Leonard: these theorists have been instrumental in the application of cybernetic principles to more democratic, participative, and cooperative forms of organisations. Above I discussed Walker's PAR work and the influence it had on my project. The other three writers listed here also worked closely with Beer and have subsequently developed and expanded his work to articulate cybernetic organisational approaches in more explicitly democratic language. These writers are the cybernetic theorists who have done the most work tying explicitly cybernetic and democratic approaches. I also attended Metaphorum and SCiO meetings, two of the most prominent groups discussing cybernetics and its applications to human organisations. These experiences helped me to see how cybernetics was discussed and understood in those spaces, as well as consider the varied interpretations the members had of cybernetics and its relation to democracy. An additional interview participant emerged in the form of Davie Phillips following my discussions with Walker and his recommendation that I get in contact (Phillips' involvement with Cloughjordan is discussed further below). He holds an interesting position in my research, since he might

hesitate to call himself an expert in cybernetics, and has not written extensively on the subject, but holds some of the richest practical experience of its democratic implementation and the challenges involved in communicating the subject. My discussions with him play a prominent role in my research outcomes. Despite this, the organisation which he founded, Cloughjordan Ecovillage, is not a major case study within my project, since I did not speak with other members of the organisation (in part, on recommendation of Phillips, as is discussed in the next chapter). They do, however, remain a vital piece of the puzzle in the development of this research and the unique perspective he provided was indispensable.[31] Additional interviews were conducted with various members of my case study organisations and others, which will be discussed next.

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[31] Below Cloughjordan is discussed as one of two 'minor' case studies in my research, supplementing the three core case study organisation I investigated.

3.7 Case study organisations

3.7.1 Common Knowledge

Common Knowledge are a *"not-for-profit worker cooperative building digital tools for grass-roots organising"* (Common-Knowledge, 2020). Common Knowledge is made up of three core members, with several others who have worked as members of the cooperative for periods of time. Due to the emergence of the Covid pandemic, during my time working with CK their work moved from being face-to-face in a shared workspace to primarily happening remotely. Despite CK's small size they use many formal processes, primarily influenced by Sociocratic governance methods. Since their founding in 2018 they have worked with Momentum during the 2019 General Election on the *My Campaign Map* app, Generation Rent and many other political organisations. They have also worked on their own internal projects and *"experiments"*, including *Movement*, which sought to help *"people who want to get involved in grass-roots activism but don't know how"* (Common-Knowledge, 2020). By creating a simple app which recommends users political organisations and upcoming events based on their "*shared interests or concerns so they could begin to organise themselves"* (Common-Knowledge, 2020).

They produce weekly *"progress reviews"* and *"project strategy"* documents to monitor on-going projects; as well as developing publicly available 'Weeknotes' documents (Common-Knowledge, 2020) to publish regular updates on their projects and organisational development. I was granted access not just to speak with the three core members of CK[32] and the above discussed documents, but also to look at the organisation's Playbook, which is a continuously developing practical guide to the group's organisational strategies and structure. Finally, I was

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[32] I spoke with one member, Jack, on many occasions and he had a significant impression on the project, providing critical feedback and practical expertise throughout.

provided access to the group's Notion platform, upon which most of their remote work together was done. These rich resources meant that I gained a deep understanding of the group's work together.

My key areas of interest when speaking with members of CK included exploring their shared interest in organisational cybernetics and its potential uses for designing more human centred and democratic forms of organisation. They were, because of this, exploring many of the same questions and problems that I was, regarding the implementation, translation, and application of cybernetics to decentralised, bottom-up organisations. This, combined with their democratic social and political goals made the group of great interest to my project from the outset. Second, Jack especially helped to guide my project's development, my thinking about democratic organisation, and my understanding of the work I was doing with HG substantially. Our discussions spread widely across a range of topics and further afield, and although most of those discussions are not explicitly recounted within this thesis, they were certainly instrumental to its development and earlier iterations. I also took a keen interest in CK's organisational approaches, in particular their use of sociocratic organisational strategies. Finally, the changes that happened to CK during my time working with them, especially regarding the disruptive effects of Covid and their transition to working remotely, became a central theme to my investigation of the group.

3.7.2 Premium Collective

Premium Collective (PK) are a collective based in Hamburg, Germany, who produce a high-caffeine cola drink. They have operated since 2001 and are an extremely idiosyncratic organisation who have developed their own governance processes over more than two decades of working together. One of the most notable aspects of PK is that they have no offices and make all their decisions through a consensus process on an online forum. Access to the forum is given to anyone who meets three simple criteria: (1) they must have consumed at least one

bottle of Premium Cola, (2) they must have met at least one member of the forum face-to-face, and (3) they must use their real name on the forum. Anyone who meets these criteria may comment on the forum and make contributions to the decision-making process. [33] The collective's open structure makes counting the number of 'members' quite difficult. There are only twelve members who receive their entire income from working for PK. However, many other individuals and organisations play various roles in the production process; PK refer to these people as 'partners', and there are approximately 1700 of them, all of whom can fully participate in decision making processes. There are roughly 300 people who regularly participate on the forum and approximately half of those are partners, the other half customers (according to Michael, a core member who I spoke with on several occasions). 20,000-40,000 people drink more than one bottle a year, making all of them potential participants in decision-making due to PK's unusually open form of self-governance. This makes approximating the number of organisation members difficult. As part of the consensus-based decision-making structure at work at PK, every participant can exert a veto on any decision being made. Michael emphasised that the veto is very rarely used (the last time it was used was 18 months prior to my discussion with him, and it has been used only a handful of times in their more than 20 years of existence) because of the close interpersonal bonds the organisation encourages and develops. PK have also never used any contracts in their organisation and have successfully resolved all inter-personal issues without going to court or invoking a contract at any time. These are just a few of the idiosyncratic organisational strategies used by PK in their work together. Others will be discussed in a later chapter (during Chapter 7), but they have so many unique and unusual approaches to organising that cannot be exhaustively recounted during this limited study. The description of consensus democracy discussed in the last chapter, as well

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[33] Even these minimal criteria are flexible, however, since I was granted access to the forum despite having never consumed the product (Premium Cola is not sold outside of Germany due to the collective's policy to limit the number of miles covered during the transportation process, as a means of reducing their environmental impact).

as the criticisms made against it, were complicated by my research with PK. Particularly unexpected was that I found that their consensus decision-making process was compatible with the dissensus based approach to democratic governance I discussed, as I will consider in a later chapter. PK generously provided me with access to the incredibly rich resource of their forum, as well as speaking several times with Michael and exchanging email communications with several other members of the collective, including Uwe Lübbermann - PK's founder - and Peter, the member who produced the organisations *Operating System* (OS), which I was granted access to. This OS provided a concise and simple explanation of the organisation's agreed policies and organisational strategies. I was also able to investigate their incredibly information rich online forum, which has more than a decade worth of organisational collaboration chronicled on it. These resources, particularly the enormous wealth of data present on the forum, meant that I had a rich set of resources to investigate relating to PK.

Several aspects of Premium Collective's organisational design stood out as demanding fuller analysis. PK's highly idiosyncratic organisational structure challenged many organisational assumptions made by contemporary theorists and practitioners. Analysing their unique approach and the communicative methods they used to develop them was a fascinating line of enquiry for my project. The organisational structure of PK was developed out of, and dependent upon, a high degree of trust and clear communication between its members. PK's long-term success as an organisation (being the oldest organisation I consider) indicated that their communicative approach has been successful as a long-term organisational strategy. Their responses to the unfolding Covid pandemic only reinforced this perception. Despite the ingenuity and solidarity shown on the forum, there were also many disagreements, disruptions, and tensions on display, not to mention the sometimes-disorganised ways in which the group approached complex problems. My fourth findings chapter will centre around my study of PK

and their capacity to fuse both consensual decision-making with an open, high-trust culture of dissent.

3.7.3 HyperGroove

Through the summer of 2020 I was introduced to an organisation in its preliminary stages of development called HyperGroove (HG), which was working towards the development of an online seed-sharing platform called SeedShare (S2). I was introduced by a close childhood friend who was one of the three members of the group, and we quickly realised that my own interests and project were closely aligned with HG's values and goals, leading to me being invited to join the group in October 2020. The collective intended to run itself democratically and cooperatively and had a keen interest in cybernetics; both in terms of its implications for the design of S2 as an application and product, but also as a way of approaching and understanding how HG itself should be organised. HG was still in its earliest stages as an organisation and remained largely informal and implicit in its organisational structure. This left a lot of room for the organisational structure of the group to be formed through open discussions. Through those discussions about cooperative organising and decision-making we began to form an idea for a digital tool to help in the guidance of collective decision-making. This idea formed into an idea for a second HG project which we discussed under the name of Hive Squared (H2). This project idea became a key focus for the three of us with a keen interest in cybernetics and throughout 2021 we had regular discussions and design sessions exploring the idea. During this time, I took regular notes on our progress as a group, our interpersonal interactions and decision-making, and our thought processes about how decision-making could be supplemented by digital tools. This project informed my research project and thinking about decision-making and democracy in a wide variety of ways and was a powerful learning experience during the formation of my project. Due to my close connection to the HG project, I had unlimited access to the work we were doing together as a group, which provided a range

of unique opportunities in my investigation. At the same time, the group was very early in its process of developing as an organisation, and our shared lack of extensive experience in organising led to unique challenges as we worked out how to organise ourselves, as well as a project which itself depended on a rich knowledge of organisational approaches.

Of particular interest in my investigation of HG was the personal experience of developing an organisation, almost from scratch, and the potential role of cybernetic language in that process. Working through my ideas with the group and testing them in an active organisational space was deeply informative for my study. Additionally, the project we had devised was centred around many of the same questions, making the project recursively related to the question of democratic organisation, as well as the role of technology and tools in the development of a democratic cybernetics. Due to the unlimited access mentioned above, I had initially planned to develop and conduct an involved PAR study with HG during my research phase. However, due to the initial stages of the organisation's development and the already demanding and multifaceted work processes we were undertaking, developing a highly participatory PAR study alongside this work ended up being too much additional work for the group, who was still working out what it wanted to become. Moreover, the questions we were working through together and the intersections our work had with my research already provided a vast wealth of information to incorporate and comprehend in the development of my project. The development of a PAR study distinct from our ongoing work together became superfluous since the HG project and my own study's work were so deeply entangled that findings in one could hardly be parsed from discoveries in the other.

3.7.4 Minor case studies: Suma Cooperative and Cloughjordan ecovillage

In addition to my primary case study investigations discussed above, two additional minor case studies emerged during my data collection which ended up playing significant and distinct roles in my research findings.

3.7.5 Suma Cooperative

One of the first substantial additional documents I worked through, after being directed to it by Mark from CK, was a discussion that took place on Loomio's consensus-based discussion forum between members of Suma Cooperative regarding their move away from the VSM and towards sociocracy (Coulthard, 2013). This discussion made an enormous impact on my research and will introduce the findings which follow this chapter. In fact, to some extent this discussion framed my research findings during its early development and became something of a jumping off point from which my findings emerged. This interaction also included Jon Walker who, along with a small group of fellow members, had been tasked with finding organisational solutions to the problems the group was facing during the 1980s, which led to his suggestion of the VSM as a paradigm for understanding and responding to the organisations incongruencies. This led to Walker's investigation of Beerian cybernetics and his eventual publication of his VSM guide for cooperatives (Walker, 1991). As will be discussed later, Walker emphasised an improvisational, low-tech implementation of cybernetics and said that they avoided the use of dense terminology, in part because of Walker and his colleagues having only a basic grasp of cybernetics and the vocabulary at stake. The group's use of the VSM persisted for many years and only waned when several new members had joined and became central members of the organisation, along with different vocabularies and ways of understanding cooperative work. While Suma were not an official case study organisation in my study, their experience with organisational cybernetics significantly contributed to my findings, emerging from this resource and the many discussions with Walker which followed them.

3.7.6 Cloughjordan

My discussions with Walker also led me to consider some of the other work he and Espinosa had done with democratic and participative organisations. In this vein we discussed their work

with Cloughjordan ecovillage, where they worked with Davie Phillips and the community at large to implement the VSM together (Espinosa, 2013). This led to Walker suggesting that I contact and speak with Phillips, who provided a unique and valuable perspective on the communication of the VSM and the struggles he had found in doing so, particularly in its long-term viability as a way of developing democratic participants' capacities to self-organise. Cloughjordan ecovillage is a community built on sixty-seven acres of land, founded in 1999 and purchased in 2005. The community has had full time residents since 2009 and even opened an amphitheatre in 2017 (Cloughjordan, 2021). Espinosa and Walker's essay concerning their project introduced the community as they found it:

> *"When we started our work in 2007, they had been in the initial development stage for 7 years: this included researching the concept and technologies of a sustainable rural housing development, raising finance, locating and purchasing a suitable site in a region needing regeneration, recruiting members, and obtaining outline planning permissions for more than a hundred homes.*
>
> *The design of the site included residential, community, agricultural, woodland and wildlife areas. The members agreed on a master plan based on sustainable principles, and chose ecological technologies, including reed bed wastewater treatment, a district heating system powered by a combination of sunlight and wood, and permaculture based allotments."* (Espinosa, 2013, p1-2)

Both these organisations explicitly implemented the VSM, used it for many years, and gradually transitioned away from the model as time progressed, and towards sociocratic governance as an approach to self-organising.[34] Despite this trajectory being reflected in both organisations they had notable differences which I will discuss in more depth later. Most significantly, Walker and Espinosa's work with Cloughjordan took place several years after Walker's work at Suma, after he had gained a more expert level understanding of the model

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[34] Davie emphasised that Cloughjordan took aspects of sociocratic governance but described the group's approach as a mixed form of *"dynamic governance"* drawing from many organisational philosophies and techniques.

and had developed a personal friendship with Beer. Phillips had a pre-existing passion for the VSM, along with many of the members of the cooperatively run ecovillage, leading to them requesting training on the implementation of the model from Walker and Espinosa. Despite (or perhaps because of) the passion for the model felt by many members of the village, the model later became a contentious subject within the village (discussed during section 4.4 and elsewhere). Some members of Cloughjordan were passionate defenders of cybernetics and the VSM, while others had little to no interest in participating in governance at all or had entirely different conceptions of how such a space should be run. More generally, the variety of activities, purposes and overlapping interests which make up an ecovillage in which members live, work, and so on, make for an unusually wide set of goals among its members. While the variety of data gathered concerning these two projects was less diverse than in my more formal case-study groups,[35] they nevertheless played an instrumental role in the development of my findings and are discussed extensively through the chapters which follow.

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[35] The limits of my access to the group resulted in me having little access to observe the model during its many *"golden years"* (Espinosa, 2023 email exchange), or to speak with some of its remaining supporters at the village (see section 4.4.3) (Kirby, 2017). Consequently, the forthcoming discussion of *VSM fatigue* and *cybernetic priesthoods* should be read not as criticisms of Walker and Espinosa's specific implementation of cybernetics at the ecovillage, but rather as indications of a general threat within pedagogic cybernetics, especially when viewed as 'scripture' by its practitioners (see section 8.3.2).

3.8 Reflexivity and limitations of study

Like any academic research, my research has several limitations, ambiguities, and plenty of room for further analysis. In this section I will reflect on aspects of my study critically, and I will offer my thoughts on how I have sought to account for them.

3.8.1 Demands on participants

First, it became obvious from the outset of my research that it would be vital that I take consideration of the significant *demands on participants* which my research could impose. Although the organisations I worked with were open and enthusiastic about working on the project, I also found that some participants, particularly because of the inaccessibility and technicality of the subject it centres around, found discussing its key topics difficult, confusing, and demanding at points. One example of these difficulties is exemplified by my work with HG, in which two of my three co-workers had a strong pre-existing interest in cybernetics, while the fourth member, who had interests in some of the technical and complex subject areas of interest to HG (such as permaculture, DAOs and blockchain technologies) had little direct knowledge of cybernetics as a discipline. As our discussions together tended towards an emphasis on systems theory and cybernetics, this member became less able to equally participate in our discussions so long as they revolved around these theoretical topics. These roadblocks to the discussion of cybernetics are explored in much more detail during this investigation. To ensure that I did not impose undue demands on my participants I took a gradual approach to planning my interviews with participants and only engaged in multiple interviews with those who expressed an interest in doing so.

3.8.2 Weak and strong bonds with participants and organisations.

Returning to my earlier discussion of PAR projects and the contrasting experiences of Swann and Walker, it is worth observing that my relationship with all but one of my case study

organisations was quite weak. This limited the extent to which I could expect continuous involvement and participation by my interview subjects. My project contrasts with Walker's PAR studies, who had a long period of working in two of the three organisations he investigated, allowing him to lay out detailed plans for the organisation's members to participate in (Walker, 1991). I realised this limitation early into my investigation because of considering the issues Swann's study had faced during his work (Swann, 2018). A contrasting consideration emerged from my final case study at HG, since there I found that the strong interpersonal bonds I had with the members of the organisation came with their own challenges, particularly when it came to tensions within the organisation and balancing the interests of my research, my own perspectives on organising, our collective decisions as a group, and the perspectives of others in the organisation.

This ambivalence between weak and strong bonds is an interesting tension in my research, one which relates to the distinction within cybernetics between 1st and 2nd order cybernetics. The former being concerned with cybernetics in which the researcher is straightforwardly distinct and 'outside' of the model they study (for example an engineer looking at a computer), while the latter is concerned with systems in which the researcher both effects and is affected by the system in question, is both within it and outside of it, undermining any supposed disinterested objectivity in their analysis of it. Second order cybernetics is concerned with all cybernetic systems made up primarily of people and concerning social systems. In this sense then, there is precedence for the ambivalence in my work between being both 'too close' and 'too distant' from my research participants. This tension goes to the base of social cybernetics and accounting for my own biases and perspectives is vital for such studies to retain validity. Balancing between these two tensile polls has significantly shaped the development of my findings with respect to both sides of the scale. On the one hand, my weak bonds with several of my case studies, particularly Cloughjordan and Suma where I only had a few sources of

data, led to me being cautious of over-extending my interpretations of their situations, or overly generalising from situations which I was not involved in directly. This led me to take a cautionary approach regarding the applicability of these findings to democratic organisations in general without further substantiation. On the other hand, those cases in which I had very strong bonds with the project and participants, particularly in the case of HG, led me to be cognizant of the dangers of including analyses which I had a particular perspective which was likely to be incomplete, partial, and interwoven with my personal perspective. By being open and explicit regarding the inevitable impact of messy personal perspective on a study such as this, I hope to mitigate these factors by considering self-consciously how best to balance between subjective perspective and so-called disinterested analysis.

3.8.3 Time constraints

Additionally, my project was limited by the amount of time I had to conduct the research. Although I expected this to limit the iterative approach my research took, I underestimated the extent to which my research methodology required a great amount of time to satisfactorily produce results. The formal feedback process with my participants became a more informal aspect of my research as it progressed because of both time constraint and the high demand this would require from participants, although it continued with some, particularly Jack and Walker, as they both enthusiastically provided feedback on my ideas and project as it progressed. To counteract the slower than expected iterative cycles of the project, I sought to investigate a wider range of sources and forms of data to gain a broader breadth of data rather than emphasising many cycles of feedback with all my participants.

3.8.4 Limited size of organisations

The generalisability of the results of this study are limited by *the size of the organisations* I studied. My project concerns relatively small organisations, which are likely to communicate

and organise in ways which larger, more complex organisations would be unable to. Further investigations into organisations of diverse types, particularly much larger organisations, would reap fruitful and potentially divergent results. I have avoided making recommendations or proposals which exceed the size limitations of the organisations I have considered in this project. Having said this, the core implications of my study are relatively scale independent. Despite the small size of my case study organisations amounting to a significant limitation on the generalisability of my study's outcomes, it is also a self-imposed limitation. The subject matters this project concerns are far too wide-reaching to provide a comprehensive analysis of single-handedly. I therefore chose early into my research to limit my study around relatively small organisations of comparable size. Investigations of larger scale organisations, along municipal, national or international organisations, would require additional research to draw solid conclusions.

3.8.5 Limited range and type of organisation

My project was not only limited by the sizes of the organisations under analysis but also the sectors in which the organisations are situated. Two of my case study organisations are part of the tech sector, while PK is a soft-drink manufacturer. Suma produces health foods while Cloughjordan ecovillage is a multi-purpose living space, workspace, and community. Consequently, while there is substantial diversity in the sectors covered by the organisations considered in this study, they are also limited. Furthermore, the variety of the sectors being investigated means that it is difficult to categorically make claims about any one of them. However, I sought throughout the project to identify and reflect on commonalities and shared experiences found across the range of organisations, as well as acknowledging their differences.

3.8.6 Impacts of Covid on my study

COVID-19 was a huge perturbation to all organisations over the past several years, and the events impacted my study as well as all the organisations and participants I worked with. Considering this enormous social upheaval and the longevity of its effects, I had to adjust my work early on to account for a lack of face-to-face interactions. This has resulted in the development of a more cyber-ethnographic study (Scott, 2009) and extensive discussions via email and Zoom make up a sizeable portion of my data. While my research would have benefited from direct interaction with participants and observations of their work environments,[36] it did not depend on these forms of data and was developed to depend primarily on verbal and written information, as well as the consultation of visual sources, most of which could be found online. Additionally, PK are based in Germany and have no offices, so directly observing their work would have been difficult if not impossible under any circumstances. The lack of situated observations (especially at CK and my minor case studies) may have reduced the richness of my direct observations regarding the day-to-day activity of the organisation; but the range of netnographic data I considered and the feedback I received to produce my findings proved to provide ample data of a wide variety (Garcia, 2014). The improvisational and iterative approach my project took also lent itself to greater adaptability to rapidly changing circumstances, which led me to be better able to account for the unexpected turbulence Covid brought upon my project. My improvisational approach also allowed Covid to emerge as a subject of discussion when relevant in my study, as it produced an enormous disturbance to the organisations I investigated and provided a context in which to observe how they respond to such calamitous situations.

3.8.7 Research participants pulling out of the study

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[36] For example, during the earlier stages of my study I had discussed doing a PAR type study with CK and later discussed observing their group meetings face-to-face, but neither of these possibilities could come to fruition.

From the outset of this research, I wanted to account for the possibility of one or more participants or participating organisations pulling out of the research for some reason. In preparation for this eventuality, I considered several back-up organisations which I could have approached. Early in my research I considered several other organisations, including a small art collective named Chapel Arts Studio, who are operated democratically and have done artistic works inspired by the notion of dissent (Francis, 2018). As it turned out, one other organisation I contacted early into my study ended up not participating in the project. This, in retrospect, was a beneficial turn of events, since HG later became a viable alternative case study organisation which provided a richer and more involved subject of investigation, especially owing to my personal connection with the group.

3.9 Summary

This chapter has been concerned with the methodological development of my project and provides a detailed overview of the content which will be explored and elaborated throughout the rest of this thesis. I discussed the methodological approach and some of the studies which were influential during the project's development. I discussed my case study method and presented it both as an iterative process and a progressive project spanning over a three-year time frame, requiring several iterative revisions over that time. I considered the organisations and experts who were invited to participate in the study. The closing section of this chapter amounted to a reflective analysis of the complications which I encountered during the undertaking of this study, as well as considering its limitations. The next chapter will begin my research findings and will discuss how democratic groups interacted with cybernetics during my study, as well as the substantial blocks to achieving a shared understanding of it.

Chapter 4 (Findings 1): VSM fatigue and knowledge priesthoods - limits to the democratic articulation of cybernetics

"Cybernetic theory with its emphasis on self-organising systems, and speculation about the ultimate social effects of automation, leads in a similar revolutionary direction." (Ward, 1966)

*"The consensus simplifies, distorts and makes trivial the real problems of complexification which is inherently too difficult for **all** to understand. Thus we come to manage an oversimplified model of the world that exists only in the mind of the consensus instead of the real world... out there."* (Beer, 1975, p381-382)

4.1 Limits to understanding organisational cybernetics in democratic groups

When I began conducting this research, I sought out the views of both researchers and organisers regarding the usefulness and relevance of organisational cybernetics to their work. While the perspectives of the academics I spoke with was often affirmative, the response from practitioners tended more towards apprehension, confusion or in some cases dismissal. Even among those with a significant interest, even passion for cybernetics, there was a sense that it was yet to be articulated into forms which were aimed at practitioners within democratic organisations in easily accessible language. While many sensed that the subject had important implications for their work, it was often unclear what could be extracted from the dense books which made up the founding texts of organisational cybernetics:

> "*I think that in terms of cybernetics, in terms of the canon… there's no "off the shelf": ok, this is how you implemented it. And there's also… I know for a fact that a lot of co-ops in the 80s were very jazzed by doing viable systems model, and there's no evidence they ever did. Right? Because no one's talked about it. And so, you know, there's no pragmatic guides to doing this. And I feel that the guides that do exist from looking at various websites and just Googling around, they all feel a bit, they just feel a bit opaque to me.*" (Mark, Common Knowledge)

There were a variety of responses from participants regarding the idea that cybernetics might assist in the organisation of democratic and participatory organisations. Some were sceptical, even dismissive of the idea, while others seemed hopeful, if not inspired by the possibility. What was shared among these diverse reactions, however, was the perception that organisational cybernetics and its application was dense, complex, and confusing. Even several of the academics I spoke with, who shared a deep interest in Beer's work, agreed that his writing was often inaccessible and obtuse:

> "*People in that community do often go "you know what, oftentimes he* [Beer] *wasn't that good a writer". Oftentimes he explained things in overly complicated ways and used language that wasn't the most accessible… People are able to say that this is the*

guy that this all goes back to, but we do need to do a lot of work on it to make it relevant and communicable to people." (Swann, interview 1)

Trevor Hilder, speaking of Beer's legacy, compared organisational cybernetics to a precious but unrefined jewel:

"he's the guy who uncovered these laws. He did a fantastic job, but he's a bit like a miner who finds a potentially beautiful jewel in a mine. You don't also expect him to do the faceting and polishing etc. That's asking too much. As the next generation, we have the obligation to do the work that he couldn't do because of the circumstances he found himself in." (Hilder, 2019)

Not only was the language Beer used often seen as inaccessible, but the interconnected and abstract concepts he referred to were often seen as too complex to implement independently of guided expertise for most practitioners. Without accessible and practical cybernetic works aimed more explicitly towards democratic organisers themselves, organisational cybernetics was seen as too unapproachable to be incorporated into the democratic organisational frameworks my participants worked within. Among practitioners there were three notable reasons for scepticism regarding the relevance and applicability of cybernetics to their work environments.

4.1.1 Caricatures and technocracy

First, among some of those I spoke with there was a degree of confusion and misapprehension regarding the history of cybernetics and the ideas upon which it was based. It is common for those unfamiliar with the subject to understand it as an extension of the prefix 'cyber', which they might associate generally with technology, computers, cyborgs or automation. This terminological lack of clarity can at times lead to confusion regarding what cybernetics is, as well as how it is used by those who want to reappraise it. This confusion sometimes led me to side-line a head on discussion about cybernetics during interviews to avoid confusion with

some participants, opting to discuss practitioners' organisational approaches in more direct and practical terms.[37]

Among the researchers and academics I spoke with, discussions frequently revolved around concerns of cybernetics' tendency to lead toward technocracy, a criticism which, under certain definitions, can be well-grounded and is evidenced in parts of these findings. In fact, this research can be understood as an extended exploration of the possibility of responding to cybernetics' apparent tendency towards technocracy and the concentration of power. On the other hand, I question the tendency for some researchers to downplay or ignore entirely aspects of cybernetic theory which emphasise self-organisation, autonomy and an explicit opposition to technocratic governance (Tiqqun, 2020; Lafontaine, 2007; Lafontaine, 2016). Beer insisted that cybernetics presented not a problem but the solution to this very real threat, claiming:

> "*for the first time, we do not need to be scientists to understand what can be done.*
>
> *It follows that we are no longer at the mercy of technocracy which alone can tell us what to do.*
>
> *Our job is to start specifying.*" (Beer, 1993, p37)

Neither the claims of cybernetics' marriage to technocratic governance nor its practitioners' claims to undo it should be taken at face value. Both accusations and dismissals of cybernetics' tendency towards technocracy are, at times, overly simplified. Throughout these findings I will investigate the possibility of undermining the technocratic impulse in cybernetics by asking to what extent it can be effectively practised with a minimum of dependence on experts.

4.1.2 Scepticism and hostility

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[37] This decision to avoid directly discussing cybernetic concepts with participants began as a tactical choice to maintain smooth running conversations and make the best use of our time, but as I will show by the third findings chapter, this turned from a pragmatic decision to a more intentional conception of how to effectively approach the communication of cybernetics and its further integration into democratic organisations.

The second type of response to cybernetics I came across during my research was not of misapprehension or caricature but scepticism and even hostility. While this at times came from people with little interest in the subject, or those who categorised it as synonymous with technocratic or even totalitarian control, there were others who had an interest in systems thinking or complexity sciences, as well as direct knowledge and experience working with cybernetic models, among them the Viable Systems Model (VSM). My first experience of this was during my investigation of an extended discussion which took place between the members of Suma Cooperative on the cooperative decision-making platform Loomio. The discussion concerned the relative merits and limitations of two organisational models: the VSM and sociocracy. Several of the participants in the organisation seemed sceptical of the value of the VSM model and one was outright hostile, claiming:

> "*I was responsible for rescuing* [Suma] *from the anarchy that it was experiencing 6 years after its VSM conversion. It was heading for collapse. Relations between people were destructive of the group.*" (Coulthard, 2013)

Vocal defendants and sceptics of the VSM were similarly impassioned and had similar numbers. Several of them also had extensive personal experience working with both models during their time at the cooperative, although it had become organised explicitly around a sociocratic approach in recent years. These criticisms seemed to emanate firstly from the perception that the VSM was a cybernetic model while sociocracy, in contrast, had emerged out of more contemporary disciplines such as complexity science. This claim might be quickly called into doubt, considering the historical emergence of sociocracy out of managerial cybernetics and Endenburg's work in particular (Buck, 2012). Criticisms of cybernetics made by Dave Snowden and particularly Ralph Stacey had left some participants with a sense that cybernetics was outdated and had been moved beyond:

> "*Sorry VSM is literally so last century. Thinking about human organisation and interaction has moved through three major schools of systems thinking since VSM and*

is now entering a post-systems paradigm. Sociocracy is in that arena." (Coulthard, 2013)

4.1.3 Curiosity and hesitation

Thirdly, several of my interview participants, involved in varied democratic organisations, had a keen interest in cybernetics and an informed understanding of the basis upon which it was developed. CK's work concerns the mediation between human and technical systems and attempts to find means of making such technologies more amenable to egalitarian forms of social organisation. All three of the core members I spoke with found cybernetics to be an exciting field to investigate on this basis, and they shared the intuition that cybernetics could offer a conceptual basis upon which more effective forms of democratic organisation might emerge. The work undertaken by me and my colleagues and friends on HG's projects shared a similar intuition that cybernetics could offer novel ways of understanding the relationship between human and technical systems, as was attested to by Jim:

> *"Cybernetic ideas are everywhere and are becoming increasingly more and more relevant. But you have to use the language of all these disparate different fields. And really, it's everywhere, cybernetics is, you know obviously you can find it in things like biology but really, it's everywhere from economics - an economy is a cybernetic network - to how engineering is bleeding out into every aspect of life"* (Jim, HyperGroove, interview 1)

Despite the inspiration some practitioners drew from cybernetics to their work in democratic organisations, they tended to have less confidence in their own ability to utilise this knowledge themselves. As someone who was conducting research in this field I at times felt expected to be able to extract from these complex texts something of immediate relevance for my participants' situations and convey it in simple and direct terms to them. This often felt beyond my own capacities as a researcher (especially as such an inexperienced organiser). The capacity to confidently apply cybernetic models felt out of reach to many of my research

participants too, who felt they had a better hope of understanding the application of these works by asking me, a presumed expert. Many of my research participants had an intuitive confidence in the power of cybernetics but a lack of confidence in their ability to proactively use it in their own organisational contexts, an apprehension which I oftentimes shared.[38] Perhaps the difficulty of applying these ideas is a result of the subject being insufficiently applied to democratic and participatory organisations, leaving practitioners with too few resources and tools to apply to their situations. Alternatively, perhaps the resources and texts which do exist, even if they are applicable to democratic groups, are too unapproachable and complex to put into practice independently.

To further explore the reasoning behind these varied responses I will discuss Walker's application of the VSM in two cooperative organisations, Suma and Cloughjordan ecovillage, both of which used the VSM for many years before transitioning to a sociocratic governance approach. This investigation will also lead to a more substantial consideration of the thorny issue of technocracy and its relationship with cybernetics, particularly through a discussion of *cybernetic priesthoods* and *VSM fatigue*. The question of technocracy, I argue, is of urgent importance when considering the impact of cybernetics on democratic organising. If, as Beer and others claim, the proper implementation of cybernetics leads to the possibility of avoiding and even overcoming technocratic governance, then it may be considered a vital component of democratic governance. On the other hand, some respondents' claim that cybernetics is bound up unavoidably in technocratic and expert-based governance, in which case its use may be antithetical to organisations wishing to be ruled by their members, rather than by those with technical expertise. These findings will attempt to take a path through these positions by

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[38] There are two clear exceptions to this generalisation. Jon Walker and Davie Phillips, both of whom will be discussed in detail throughout the following chapters, began as members of democratic organisations and later applied the VSM to those organisations successfully for many years.

articulating both the barriers and possibilities of articulating a democratic conception of

cybernetics.

4.2 Participatory understanding of cybernetic governance models

The discussion, held on the online forum Loomio among the members of Suma regarding *"synergy between Sociocracy and the VSM"*, was framed in less synergetic terms by some of the participants than the discussion's title implies (Coulthard, 2013). Staunch defenders of each model stood on the apparently opposing sides of the discussion, with several others trying to find common ground between the warring factions. Defendants of the VSM proposed some limitations to sociocracy and benefits of the VSM, also referring to the theories compatibilities and similarities, while defendants of sociocracy saw the model as incompatible with the VSM, which they argued was outdated and less finely tuned to democratic organisations. Among those trying to establish commonalities was Jon Walker, who was no longer a member of the organisation but was still close with several members and still had a personal stake in Suma's success, as well as the model he had introduced to the organisation many years earlier. While one participant seemed unwaveringly opposed to the use of the VSM, there were several others who were less overtly hostile to the model, but were sceptical of its usefulness, nonetheless. Larry suggested that the lack of evidence pointing towards the widespread use of the VSM indicated a lack of viability as a model, saying:

> "*If the model works in general (not in a few special circumstances) then it is readily replicated… If the model worked, after 30 years there would be dozens if not hundreds of such enterprises thriving around the country, with new groups picking up the model and running with it because it met their needs so well. And there aren't."*. (Coulthard, 2013)

Although this comment received pushback from other participants on epistemological grounds, with one participant asking, "*Were there not times in our past where the church refused to look down the telescope or Einstein's theories were mocked by the established view of the day?"* (Coulthard, 2013) it is nonetheless noteworthy that VSM has struggled incorporated into democratic organisations over the long-term. Although the applications of the model show

evidence of success in some respects, they have, in the limited cases considered in this research, ended up transitioning away from the VSM and towards sociocratic forms of governance. When a vote was later proposed to discuss the VSM over a two-day workshop, several participants (who had actively participated in the preceding debate) stated that they had struggled to understand the VSM but found sociocracy useful. This indicates that even in contexts where the model has, in the past, been a part of the organisational structure for many years, participants still struggle to attain confidence in their ability to understand and apply it.[39]

Despite the fiery debate between VSM and sociocracy defenders there were several participants who emphasised compatibilities between the two models, and still others who drew attention to their differing purposes and the resulting inappropriateness of opposing one model to the other. Ruth, unfortunately close to the discussion's conclusion, pointed out the complimentary but distinct purposes of each of the models, stating:

> "*sociocracy is not a diagnostic tool, it is not a way of analysing things. The sociocratic group described would be using sociocratic means of communicating with each other and delegating tasks and arranging workflow… VSM is a set of diagnostic/analytic tools/principles, which you can use to look at existing organisations and work out whether they're viable. I don't think it makes sense to compare VSM and Sociocracy in this way, they're complementary and they are used to achieve different things.*
>
> *Sociocracy = a way of working*
> *VSM = an analytic framework and set of design principles*" (Coulthard, 2013)

Other participants, including Walker, focused on the compatibilities between the two models and their appropriateness for distinct types of problem, but the most polarising viewpoints drew time and attention away from the synergies the discussion initially sought to find.

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[39] It should, however, be noted that many of the people present when the model was initially introduced to the organisations are no longer present and may therefore have had little practical experience of using the model directly. This implies that ongoing training on the model is required for its long-term success.

Nevertheless, Walker pointed towards the strengths of each of the model, arguing that while he viewed the VSM as "*a more complete theory*" which is *"clearer about some things which are implicit in Sociocracy but not clearly defined"* (Coulthard, 2013) he agreed that sociocracy was "*much more accessible and friendly*" and *"has lots of details about the practicalities of the way things work - like double linking - which the VSM doesn't get into."* Going on to say,

> *"VSM is much more about general principles, axioms and laws and doesn't specify details which are context specific. (You are expected to work it out for yourself)"* (Coulthard, 2013)

Walker emphasised the strong similarities between the models, arguing that the "*two approaches are very, very similar in many respects*" both being *"part of the family of organisational theories which base effective organisation on unleashed individuals and self-organising work groups, and then design structures to knit the autonomous parts together in an effective, coherent whole organisation"* (Coulthard, 2013). He emphasised their common roots in cybernetics and systems thinking, being "*all about real-time information flowing in loops, multiple feed-back structures, and patterns of relationships."* (Coulthard, 2013)

While Walker pointed to the complementarity between the models, he, echoing Beer, emphasised the importance of using these models only to the extent that workers find them to be useful in providing a coherent structure to the organisation:

> "*Ultimately everything is about deciding who's involved in what, who needs to talk to whom, what sort of decisions need to be taken, and where those decisions are made. I guess this is what a structure is. Both Sociocracy and the VSM provide a template to start the debate. But as Stafford used to repeat regularly, there are no right answers, only models which are more or less useful."* (Coulthard, 2013)

Despite sociocracy and the VSM having many compatibilities as well as differences, what is clear from the discussion at Suma is a high variability in the knowledge of, interest in and patience for the VSM. Despite Walker and Phillips drawing attention to the limitations of

sociocracy as a governance process, mostly in relation to comparing its theoretical rigour to the VSM, the divisiveness of opinion regarding the VSM stands out in this discussion, whereas sociocracy seemed to be generally agreeable to the group.

After several months of back and forth on the discussion thread, Tom, who had begun the discussion, suggested a two-day meeting to discuss the synergies between the two models and to unravel some of the misunderstandings and conflicts that the forum discussion had exposed. The turnout for the vote was, in Tom's words, *"weak compared to votes on other proposals"* (Coulthard, 2013) and despite having no votes against the proposal, two thirds of the votes cast abstained from voting, indicating a lack of motivation to commit two days to such a workshop. Tom's summary of the outcome of the vote is revealing of both the demanding time-requirements expected to understand a model like the VSM and the contrasting ease and familiarity most participants felt towards sociocracy:

> "*A common thread in the responses has been the time commitment for a two-day meeting. Stafford Beer was commonly asked what reference material he based the VSM upon and his answer was that it extended into two thousand volumes. I fail to see how justice can be done to such an important subject in less time.*
>
> *Another common thread is a feeling of being comfortable with sociocracy and I have to agree that much of what is taught is in the right direction. If people are to be forced to make a choice then we would lose many, in the search for synergy, as they slide down that slippery slope of self-justification into one camp or the other.*
>
> *Another common thread has been one of relevance of the VSM today. There seems to be a misunderstanding of the VSM as some sort of "systems analysis tool". The deeper I get into his work I realise this is not a "tool", it's a vocation.*" (Coulthard, 2013)

This sometimes-heated discussion emphasises major differences between the ways the VSM and sociocracy are perceived by members of democratic groups like Suma. Walker's extended interventions to clarify similarities, differences and synergies between the two models, as well as Tom's insistence that understanding the VSM requires at least two days of discussion

(following a several month long online discussion), indicates both the complexity of the model and the need for experts like Walker to support groups in utilising it and, more than that, to reinforce their understandings of the VSM so that details of the model's uses and limits are not lost over time.

Another thing that jumps out from this discussion is the contrast between the goals of the two models. As was pointed out during the discussion, sociocracy was purpose built as a governance structure to be used by democratic organisations. The VSM, on the other hand, was developed as a general model of complex systems, compatible with biological and ecological systems as much as social systems. The VSM is not exclusively applicable to human organisations, much less democratically run ones, and so the complexity of applying it to such contexts is of little surprise when compared to a much more contextually specific approach like sociocracy. As was confirmed by Walker, the addition of practices specifically tailored to democratic organising, such as clarity regarding meeting circles, as well as double linking to ensure information is shared, makes sociocracy directly applicable to democratic organisations in a way that the VSM is not. In addition, as was pointed out to me by Phillips, the VSM does not include a recommended decision-making criterion, unlike sociocracy's use of consent. In contrast, as was emphasised above, Beer often seemed to assume that parts of the VSM are to be made up of members of an organisation's *'higher management'* (Beer, 1995, p225). This assumption is plainly out of line with the democratic application of cybernetics I am here discussing, in which the rule of higher management is replaced by that of an organisation's members themselves, as Walker referred to above (see section 2.6.6).

This discussion has implications regarding the application of organisational cybernetics to democratic and participatory organisations. Beer's *"two thousand volumes"* of VSM reference material, the many months of forum posts and the proposed discussion time of two days minimum are all indicative of a highly complex system for a group to collectively grasp and

organise democratically (Coulthard, 2013). The VSM is a difficult to understand system which requires that those who use it learn its various underlying concepts, assumptions, and the ways in which they interrelate. Failure to learn or retain the subtleties of this complex system may, in part, account for the frustration and fatigue some members of Suma expressed regarding the VSM. On top of this, the model lacks the focused specificity of sociocracy to democratic organisations, both in terms of the more easily understood language used in the latter and its introduction of mechanisms specifically tailored for democratic organisations. This complexity gives the VSM a high barrier to entry for newcomers, and those without a personal interest in the model may find themselves being dependent on (1) experts to guide them through the model, (2) dense texts by Beer or others, or (3) members of their own organisation who have learned the subtleties of the VSM. This dependence on those with a deep commitment to cybernetic theory is suggestive of my earlier claim that cybernetics may tend towards dependence on experts. The case at Suma further shows that within organisations who had used the VSM for many years there remained a requirement to revise and reinforce the model by those with cybernetic expertise.

4.3 Cybernetic technicality and participatory clarity

We can begin to see two different approaches to conveying organisational ideas here, epitomised by the VSM and sociocracy respectively. On the one hand we have the technical, conceptually dense VSM, which couches itself in scientific language and prides itself on theoretical rigour. On the other hand, sociocracy emphasises more direct, concise, and contextually specific language to communicate to diverse groups of participants (although there are still limits to the extent to which it can be independently taught by groups to themselves). It follows that democratic contexts would tend to prefer the latter form of communication, not because scientific language is out of line with democratic organising, but because diverse interests, ways of thinking, speaking and understanding are common to diverse groups of practitioners, and consequently more accessible language is preferable in situations where all members of a group are expected to be able to understand, follow and decide as a group. Minimising inaccessible language is beneficial to groups who include all their members in decision-making processes. Rachel Plattus' distinction between simplicity and ease, as used by Adrienne Maree Brown in her book *Emergent Strategies*, was informative in this regard:

> "*There is a difference between 'simple' and 'easy.' Simple as in the 'relatively simple interactions' of emergence, easy as in 'facilitation is the art of making things easy.' I don't think they are the same, and I have a hunch the difference might be important and that maybe it should be explicit. Simple means that it boils down to relationships between individual people, objects, beings, truths. Ease has more to do with the amount of friction (or understanding) between the peopleobjectsbeingstruths. And part of what can clear a path to making things easier is to name the simple interactions at play in a complex system.*" (Brown, 2017, p30)[40]

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[40] Noteworthy, here, is the etymological link between ease and facilitation, the latter being understood to be the ability *"to render easy"* (Harper, 2014).

A commitment to making democratic organisation *easy* for its practitioners might extend beyond the role of the facilitator alone and suggest a more general principle of democratic collaboration. Communication, at the level of conveying ideas to a diverse group of participants who are assumed to have an equal right to participate in decision-making, should, whenever possible, be expressed in easily understood language and reveal the simplest ways to deal with complex situations. This criterion of good democratic communication will be referred to as *participatory clarity*. If we extend this commitment to the ease of communication to organisational models themselves, it becomes clear that the VSM is little match for sociocracy when considering this criterion alone. The VSM may be a more theoretically rich and rigorous model, but it is undoubtedly less easy for democratic groups to use. Having said this, Phillips remained cautious of sociocracy and argued that the model may run into the same problems of inaccessibility, indicating that while sociocracy might be preferable to the VSM in this regard, improvements in the ease of implementation should still be sought:

> "*I think the language around sociocracy is… OK its less dense, I told you the last time that I've got all Stafford's books but its hard work reading* [them]. *And I can listen to him for hours but it's that top-down, I'll talk at you, "over-academicky" thing will do my head in, so I quite like what's happening in sociocracy. But it still is language that some people might go "I don't know that language, therefore they're other and I feel less because they're speaking that way and I feel excluded". So, I don't feel it's going to be much different.*" (Phillips, Cloughjordan ecovillage, interview 2)

We might therefore hesitate to call sociocracy a great example of *participatory clarity* overall (writers like Brown providing better guidance in that regard) but sociocracy nonetheless provides a far more accessible, direct and highly specified model than the VSM, since you are not *"expected to do all the work"* yourself (in Walker's words).

4.3.1 Specialisation in democratic groups

Of course, complex and highly specialised discussions are common in democratic organisations, particularly in smaller knit groups such as in CK and HG. Design sessions often require detailed expertise on specialised subjects, tending to take place among only those who share expertise or interest in those areas. These highly specialised discussions tend to be discouraged in larger group settings, though PK are quite unique in this regard, having open forum discussions on everything from the most specialised to the most general discussions in which any member is invited to observe and participate. Despite this openness, the discussions tend to be participated in primarily by members who have the relevant expertise to easily understand the discussions at hand, or who feel they have a perspective to contribute which is being missed out by the discussants. Despite the open character of all PK's discussions, there was still a keen sense that conversations in which all or most members were expected to participate should remain easily accessible to all members.[41] This meant both using simple and non-technical language when possible as well as speaking concisely. This is not to say that PK were always successful in maintaining this ease of communication; on some occasions where detailed discussions implicated the membership there was pushback against the time and effort expected to participate:

> *"My main criticism is this never-ending detail, I have not read the proposals from Uwe to the end, much too long and too elaborate and for me with no clear statement within (we try…) at least regarding the points that I have read. I am probably not the most patient person but if in a thread I need over an hour to read the posts of a week, for me the time is too precious."* (Garry, Premium Collective forum, *Financial Realignment Premium*)

Criticisms were made not only of those who wrote extensively long posts, but also of PK's forum itself, which limited the accessibility of discussions and protocols (an issue I will discuss

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[41] Posts on the forum had a characteristically casual writing-tone throughout, leading to minor adjustments being made to parts of the grammar during translation for ease of comprehension in an academic text such as this (such as adding capital letters and tweaking punctuation).

in more detail in a later chapter (see section 7.6)):

> *"This board has become very extensive, in my view also very confused, and no longer reports new posts, so that one can hardly find anything and the exchanges within it are always going further backwards. There are a few approaches to establish a new structure, but this task is so extensive to implement that, until now, no one has done it or managed it. Currently it is enormously difficult for new people to find their way around, and several people who have already been here longer are expressly complaining about this. So, we need in my view either a more organised and much easier to use board, or another discussion-solution that is also much simpler to use from time to time on the phone. The problem again briefly put: the discussion has gone to sleep, and the problem lays with the board."* (Lübbermann, Premium Collective forum, *Online Tools*)

Smaller-knit design groups also tended to emphasise the use of easy and concise language. CK avoided long sprawling messages on their shared group chat, ensuring this by enabling 'disappearing messages' on Signal and keeping any detailed work away from the group chat, focusing instead on their Notion platform (where long-form discussions could be had without disturbing the work of others):

> *"We started doing a lot more discussion through Notion. We killed Slack. We decided to get rid of real time chat through Slack because we wanted our comments in Notion related to the thing we were talking about rather than separate. And to reinforce this we also added a time limit on Signal so that stuff would be deleted after 12 hours to encourage ourselves not to see Signal as a store of information."* (Jack, Common Knowledge, interview 2)

This shows not just the need within democratic groups to retain easily understandable and situationally embedded language, but also emphasises the interconnection between easy communication and the technology through which that language is conveyed. This tendency towards simple and concise language extends beyond the internal environment of the organisation and into communications with the public. CK's Weeknotes, which shares with the public the work that the group had been doing and their ongoing learnings about working

together, focused on conveying their shared learning briefly, concisely and clearly (Common-Knowledge, 2020). PK's OS system (their unique self-governance protocol) was written up by Peter primarily to communicate their governance approach to other organisations who might wish to use it. Despite being made up of over sixty components in the form of 'modules', each one is expressed in no more than a few sentences, and uses clear and concise language, avoiding unfamiliar jargon. Their forum also includes pages which briefly outline their decision-making process in clear and direct terms, with no more detail than is strictly necessary. For example, PK's unique 'anti-quantity discount' policy is conveyed in two short paragraphs:

> *"This module is about creating a fair cost structure for small and new merchants, in which when purchasing smaller quantities, a part of the transport costs is compensated. Through this, a diverse merchant structure is promoted. The goal is to obtain various smaller merchants and prevent the trade just developing through chains and larger merchant companies. Even when it is more demanding to cooperate with many merchants, at the same time it does protect us from dependence on just a few wholesalers. The challenge with the structuring of the small order discount is to structure it so that there is always an incentive for the merchants to meet every demand and work efficiently.*
>
> *As a share for the small purchase discount will be budgeted for in the product price, we will create the necessary leeway to support merchants with lower sales figures. In that we grant them a discount on the purchasing price. In this we support smaller businesses, to put them in the position to offset enough surpluses to sustain their business operation. This strengthens the supply in that area, since the merchants may not have any possibility to reach high sales figures on account of their local conditions."* (Premium Collective, Operating System, Module 09B)

While democratic groups regularly use idiosyncratic language and long-form communications among themselves, they tend to prioritise clarity and brevity over rigour and precision when communicating with the public and, vitally, when discussing topics related to the organisation, such as governance practices, organisational frameworks and so on. This leads me to argue that the 'ease' of understanding, partially enabled by a model like sociocracy, is indicative of

a more general principle that other cybernetic models, such as the VSM, would do well to learn from when being applied to democratic contexts specifically.

4.4 VSM fatigue and priesthoods

The tendency of democratic groups to discuss governance in clear, concise, and simple language is in tension with the highly complex array of interlinking concepts, models and terms which combine to construct the VSM. The complexity that is associated with the VSM is certainly not unique among cybernetic governance models. Team Syntegrity (TS) is based on a similarly wide range of disciplinary expertise, concepts and models as the VSM, and arguably the resources upon which it is based are more obscure and difficult to grasp without a handle on several advanced topics, particularly Fullerian geometry (Beer, 1994). More broadly, cybernetics can be conceived as a sprawling discourse of overlapping topics, concepts, and models, each of which is challenging to master. This is not to say that every model and concept common to cybernetics is conveyed in such complex language. I have already argued that sociocracy is both relatively easily understood and is a tool of cybernetics. Writers like Brown, Laloux, Cottam and Marsh, though they might not declare themselves to be cyberneticians, can similarly be seen as contributors to cybernetic discourse (Brown, 2017; Laloux, 2015; Cottam, 2018; Marsh, 2013). These writers convey their ideas in less scientific language, directed more towards practitioners and a general audience than academic experts. Despite these exceptions, there is a tendency within cybernetics towards technical and rigorous language which presents a challenge to the application of cybernetics to democratic organisations. The 'easy' ways in which governance tends to be discussed is out of step with the technical complexity of much of cybernetic discourse. Since participatory organisations depend on clarity and mutual understanding, I argue, this constitutes a challenge to democratic groups who want to implement complex cybernetic models such as the VSM, yet do not share a relatively even knowledge and interest in cybernetic concepts, models, and ways of speaking.

While the unusual subject area of this research led to two of the organisations I included (HG and CK) being comprised of members who share an interest in both participatory organising

and cybernetics, it should go without saying that among many democratic organisations there is far less interest and evenly shared knowledge of the subject. This, I expect, is especially the case in larger organisations, as it is likely that the shared interest in cybernetics and the status of these organisations as small design-oriented collectives is not coincidental. This should not be surprising considering the high barrier to fluency in much of cybernetic nomenclature. In PK there was little if any explicit interest in organisational cybernetics discussed among the participants (closer to the norm among democratic organisers), and in both Suma Cooperative and Cloughjordan ecovillage there was a highly uneven distribution of insight, interest, and support for the subject. In both these cases there was a minority within the organisation with a passionate interest in organisational cybernetics and its possible implications, while fluency in this highly complex subject was shared unequally among the participants, and others had no interest or had outright rejected the subject as being of use.

The two key issues I discuss below initially emerged from my discussion with Jon Walker and Angela Espinosa, who discussed with me their decades of work using the VSM in participatory and democratic groups. Their work at Cloughjordan with Phillips led to a unique implementation of the VSM which, while still being used by the group in principle (Phillips 'jellyfish VSM' still occupies the wall), in practice transitioned into a sociocracy based 'dynamic governance' approach after many *"golden years"* of successful VSM use (Espinosa, interview 1). Despite the tensions that would later emerge from the use of the VSM, amounting to what Espinosa referred to as an *'internal war"* (Espinosa, interview 1), Phillips said that the official organisational structure of the ecovillage remains the VSM and that it still plays a significant role in some of the members thinking. Despite this formal structure remaining, Phillips was clear that in practice the VSM had very much taken a backseat over the years, with some hostility towards it developing among several of the community's members, which echo what I observed at Suma (Coulthard, 2013).

4.4.1 Priesthood

During my initial discussion with Jon Walker and Angel Espinosa regarding Cloughjordan's transition from using the VSM to sociocracy, it became clear that the ecovillage's transition had come in the wake of polarised opinions developing among participants over the years, comparable to what I had earlier observed during the discussion at Suma (Coulthard, 2013). As we discussed what happened at the ecovillage to produce strong reactions to the VSM, Walker was reminded of a member describing to him a sense of a cybernetic *"priesthood"* developing among those within the organisation who had the greatest interest in the subject:

> *"There were accusations of the people who got really good at it becoming like a priesthood. And whenever anything came up, they'd say, "well, of course if we look at it from the VSM point of view we should do this and this", and it was a bit like the Pope saying, "God wants you to do this and so you better do as I tell you". This whole thing about power structures emerging, which of course was the last thing that we wanted, because people understood the model and they were making suggestions from it and saying you can't challenge us because we're the people who know what this is all about."*
> (Walker, interview 1)

The emergence of a sub-group within the organisation developing fluency in cybernetic language and the VSM, while not being shared by the whole group, had a negative impact on the egalitarian aspirations which Walker and Espinosa's application of the VSM was intended to produce and reinforce. Without a shared, basic understanding of the diagnostic tool being grasped by the whole group one can easily envision an informed minority of the organisation's members, with the ability to fluently talk in cybernetic terminology, becoming the dominant decision-making group within the organisation, despite the goals and intentions of those who introduce the model.

Despite the deeply problematic implications of the emergence of 'priesthoods' in democratic organisations, I should qualify this with the observation that fluency in cybernetic language is

not exclusively gained by those who have formally studied cybernetics or committed months of attention to Beer's dense writings. Several of the VSM's most devoted defenders had no formal background in systems theory or cybernetics. Notably this included Phillips himself, as Espinosa reminded me:

> "[Davie] *will give you a very practical answer, because he's not an academic. He hasn't got a PhD. But very intuitive, very creative and an amazing personality"* (Espinosa, interview 1)

Other members like Dan (discussed in a later chapter (see section 6.5.5)) also had no background in systems and cybernetics but was so inspired by the VSM that he wrote a short but visceral text describing the model (see appendix). While a passionate interest in cybernetics does not depend on academic training, it does seem to require an intuitive sense of cybernetics' significance, a topic I will soon return to and name *cybernetic intuition* (see section 4.5.1). This intuition may emerge from varied sources: Beer's texts, discussions with experts and practitioners, or from experiencing its practical application. Whatever its source, this intuitive grasp of cybernetics and the language upon which it is based requires considerable time and attention and is often not shared by every member of an organisation, leading to an unevenly distributed capacity to participate in self-governance grounded in cybernetic vocabulary. Despite suggesting that an interest in cybernetics often emerges *intuitively*, rather than from technical training itself, I nonetheless identify the emergence of a *cybernetic priesthood* with a form of expert-based governance which conflicts with democratic governance as it is understood in this research.

4.4.2 VSM fatigue

While some members of democratic groups quickly develop a strong intuitive affinity with the VSM like Phillips, Dan, and Walker himself, this cannot be said for everyone who is introduced to the model. On the one hand, those who latched onto the VSM can become

enamoured with the model and its intricacies, while others see the complex, time-consuming model made up of interrelated subsystems as intimidating, overwhelming and inaccessible. The first of these groups could, under unfavourable circumstances, develop into a priesthood-like governance body with special access to the subtleties of the VSM and cybernetics more broadly. The latter, contending with not just the complexity of the model itself but also the proclamations of its interpreters, may develop what Walker referred to as *VSM fatigue* (Walker, interview 1). During my discussions with both Walker and Phillips they agreed that this was a key contributing factor to the eventual antipathy that would develop towards the VSM by some. Long meetings punctuated by technical discussions of the VSM, which only some could meaningfully participate in, led to others feeling excluded from governance at Cloughjordan. Phillips described the outcome of this on the community and their perception of the VSM:

> "*I'll tell you, my experience of bringing the viable systems model into organisations is people get tired of talking process and it's too complex for most community groups. It might be good for British Steel or for a country or something that Stafford was working with. But for community groups it is too complex. We've actually got, still, a resistance. Some people still give out about viable system model dividing us and just not getting it*" (Phillips, interview 1)

Over the course of years these inequalities led to increasingly explicit tensions in the group, changes in the decision-making process, organisational structure and eventually to the introduction of sociocracy and other forms of 'dynamic governance'. Additionally, it led to Phillips himself withdrawing from the Process Committee altogether at the ecovillage to minimise any perception that he was directing the group towards a particular set of ideas. This led to the new sociocratic model being introduced and Phillips taking a step back from his once significant role in governance.

4.4.3 VSM and the threat of language-based power inequalities

All this amounted to the VSM diagram, which still occupies Cloughjordan's wall, being little more than a call-back to a past governance system in the community. The scepticism which many of the current members feel towards the VSM can be illustrated by Phillips' apprehension about putting me in contact with other members of the community:

> "*There's quite a lot of tension around the VSM. It's almost like a dirty word (you know, don't say that word again…) and people actually seeing it as, it'd be great to scratch the surface and work out why people think this, but people think it's been a problem.*" (Phillips, interview 2)

VSM fatigue and priesthoods are two key impacts which may emerge from a highly varied level of interest and expertise in cybernetics and its influence on organisational design among groups who implement it. Despite these commonalities, the impact of these two threats manifested differently in each of the two cases I have discussed here. In a later interview with Walker, he argued that the inequalities which emerged from Cloughjordan were significantly less of an issue in his experience at Suma.[42] This was surprising, having seen the way some members of Suma had dismissed not just the VSM but systems thinking and cybernetics altogether. Walker argued that a simpler implementation of the model took place at Suma. He had learned about the VSM during his time as a member of the cooperative, and claimed that he had, at the time, barely understood the model himself:

> "*At the time, I mean I knew about the VSM but I'd never… I mean saying that I didn't really understand it at all at the time.* [We] *turned to it because there seemed to be a whole load of issues coming up which it seemed to have something to say about. Our job was to provide proposals about organisation, the tools we used were a bit of an irrelevance, whereas when we went to the village, the village had already decided to use the VSM, so we were told to come and do a VSM job.*" (Walker, interview 6)

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[42] Importantly, Walker and Espinosa emphasised that the tensions which emerged at the ecovillage were not present during earlier parts of the project and emerged because of membership changing over time, and new people arriving with more conventional and hierarchical attitudes towards management.

At Suma, the model was learned on the job and was suggested by Walker and a few colleagues as a possible solution to the lack of organisational coherence that Suma had identified as a problem in need of a solution. After a campaign by Walker and several of his colleagues to convince the membership that the VSM would help to resolve their lack of organisational cohesion, the motion was eventually passed, and a small group was formed to implement the novel application of the VSM. This was the first application of the VSM to a cooperatively run organisation and was an incredibly novel undertaking, with many members of Suma participating in developing a rough idea of how to apply the model with their limited knowledge and understanding. Walker emphasised the importance of using KPIs (key performance indicators) in this early adaptation of the model to a democratic organisation. This simpler application of the model emerged from Walker and his colleagues' more amateurish understanding of cybernetics and may have resulted in a less technically dense implementation of the VSM, resulting in more accessible and inclusive discussions about its use:

> "*At Suma we didn't use VSM terminology. So, well you've read the case study. If you look at the proposals we made originally, they were made in very, very simple language and all couched in terms of rethinking Suma as a collection of autonomous self-organising little groups.*" (Walker, interview 6)

This contrasts with the introduction of the VSM to Cloughjordan, where Walker and Espinosa were brought in as experts to teach the model to a group who had decided among themselves that the model was a powerful tool in need of implementation:

> "*I think with Suma we didn't talk about the theory, we didn't say "we are using the viable system model" and I think because of the sort of people at the village they wanted to say, "we have adopted the viable system model". And there was a group of people who were very into it who said "we want this in our constitution" we want it written in tablets of stone that we use the VSM. And a lot of people said, "well that's crazy because it's just a tool and we might find something we find more appropriate and then we won't*

be able to use something we find better'', which I agreed with completely. So, there was a sense that it was this kind of statement that they were using the VSM, whereas at Suma we just said, "well this is a proposal to reorganise" and put it into practice.'' (Walker, interview 6)

It is plausible to suggest that the initial commitment to the VSM by many at Cloughjordan may have later led to some members feeling fatigued by the long, in-depth theoretical discussions which it involved, while the more impromptu and pragmatic use of the model at Suma may have led, during its initial implementation, to a less invasive impact on the groups participants who did not share an intuitive passion for the subject.[43]

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[43] The above quote also emphasises the limits of a consultant's ability to impact the organisations they work within. Members of the community who wanted the model *"written in tablets of stone"* did so against Walker and Espinosa's recommendations.

4.5 Expertise and cybernetic intuition

Unsurprisingly, over the several decades since Walker left Suma, there have been many changes in both the staff at the cooperative and shifts in the organisation's culture and practice. My findings suggest a decline in the prominence of cybernetics as a shared way of discussing the organisation at Suma. The organisation declining Espinosa and Walker's offer to return to reinforce the VSM is indicative of this shift:

> "*Angela and I were very keen to go back and do some more work, but our invitations were not taken up [laughs]. And I think what happened was, because they were a very self-sufficient bunch of people they said "no that's fine, you've done your job, we know the model now. We're going to take it the way we want to take it"* (Walker, interview 5)

Phillips also referred to a similar loss of cybernetic knowledge at Cloughjordan, saying *"it's something where we're losing that knowledge that we built up when Jon and Angela were with us."* (Phillips, interview 2). This prompts me to question the capacity of democratic groups to retain a shared understanding of the VSM over the long term, at least in the cases discussed here. As was mentioned above, both Walker and Espinosa emphasise the importance of regularly returning to organisations they have worked with and reinforcing both the cybernetic terminology they introduce and the VSM model. They argue that such a complex model requires intermittent reiteration from specialists. However, this dependence on the continued support from experts over the long run presents a threat to the long-term viability of democratic implementations of the VSM. This was suggested by Walker, who said:

> "*I think once you start with external, you know, you look outside for someone to tell you what to do, its problematic in that you say, "well we don't know but someone outside does" I think it's much better for people inside to say, "we're going to learn all this and develop it ourselves". In all the work we've done with all the organisations we've done, we've come in as external experts and said "we're going to work with you on this, we won't tell you what to do, because we don't know enough about the*

organisation to tell you what to do. You know about that; we have these ways of thinking about organisation and its going to be a partnership."" (Walker, interview 3)

This presents two challenges for the long-term viability of the democratic application of the VSM as a diagnostic framework. First, democratic groups appear to struggle to organise *themselves* around the VSM over the long term. Although both Walker and Phillips taught themselves the model and successfully implemented it for a time, it later failed to outlive their participation in the group and appears to have become less popular among participants over time. Additionally, it requires semi-regular reinforcement from specialists for the group to remain familiar with it, in its current form. If the VSM is dependent on regular reinforcement by experts for its maintenance, if not its initial implementation, this presents a challenge regarding the long-term viability of implementing the VSM in democratic organisations, particularly if regular and ongoing expert reinforcement cannot be guaranteed. On a more practical level, the requirement of specialist reinforcement from experts like Walker and Espinosa makes the widespread adoption of the model more challenging, due to the time and effort it requires for the few VSM experts with an interest in applying the model to democratic, cooperative, and participatory organisations. While these two practitioners have successfully introduced the model to many organisations, communities, and groups, if they are right to think that the model requires regular reiteration by experts like them, then the spread of the VSM is equally dependent on the proliferation of VSM experts as it is on the democratic communities in which it is applied.

All this seems to imply that the VSM, in its current form, has significant hurdles to overcome regarding its implementation within democratic groups over the long term.[44] This is especially true of democratic implementations of the model for at least two reasons. First, democratic

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[44] It is important to note that our study suggests that this is a consequence of the inaccessible language and representation of the model, rather than a general critique of the model itself. Other framings of the VSM will be explored in Chapter 6.

organisations tend to articulate their governance practices in straightforward and concise language. The complexity of the VSM, at least as it is presented in Beer's works, makes this concise and easy articulation of the model difficult for non-specialists. Secondly, democratically organised groups rarely have plentiful resources to spend on governance guidance or diagnostic support. This is evidenced by Walker and Espinosa's regularly self-funded trips to communities and organisations they have worked with to voluntarily reinforce their understanding of the VSM and the cybernetic paradigm on which it relies. This discretionary support to the organisations and communities they have worked with shows a generous and supportive approach to teaching the VSM, but it is also indicative of a generosity which is not, unfortunately, sufficiently widespread among VSM experts.

4.5.1 Cybernetic intuition

We have argued during this chapter that the complex character of the VSM lends itself to being taught by experts and may require regular reinforcement from specialists for practitioners to retain a working knowledge of it. Having said this, I should qualify my use of the word 'expert', since many of the VSM specialists I have discussed so far, including Walker and Phillips, gained their own expertise in the model from independent studies of Beer's works and an intuitive grasp of the model's significance. Indeed, there are very few institutions which teach the VSM or organisational cybernetics, and many of those with an interest in the subject (me included) discovered the model without 'expert guidance'. As was suggested above (see section 4.4.1), many of those I spoke with during this research with a passion for the VSM gained it not through a university course or qualification, but through independent research and an intuitive grasp of the model's potential impact.

What is at stake, therefore, with the apparent inaccessibility of the VSM is not so much its inaccessibility to non-academics, but rather an *intuitive* appeal of the model, felt strongly by some while remaining unfelt by others. I refer to this strong but highly divergent intuitive

appeal of cybernetics as *cybernetic intuition*, the defining characteristic of which is its apparent sporadic distribution among groups. I have suggested that democratic implementations of the VSM require ongoing intervention from specialists to be sustained over the long-term (again, in its current form). While I argued above that practitioners who embrace cybernetics often seem to grasp the subject and its impact intuitively, it remains true that interest is often triggered by, or contributed to, by exposure to expert guidance, even if the subject is subsequently self-taught.[45] During this research I have observed at least three forms of cybernetic expertise which have contributed to the reinforcement of the VSM in democratic organisations.

- First, consultants like Walker and Espinosa have introduced, taught, and reinforced the use of the VSM in many communities and organisations over several decades. As I have already argued, such interventions may require reiteration of the concepts involved to remain effectively practised by the organisations in question.

- Second, leaders or individual members within an organisation may discover cybernetics or the VSM and gain what I have called a *cybernetic intuition*, leading either to them instantiating the model themselves or inviting a consultant to teach the model. As a worker-member of Suma, Walker introduced the VSM to them as a

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[45] An exemplar of someone with a strong *cybernetic intuition* might be Brian Eno, who after reading Beer's *Brain of the Firm*, claimed that all his music which followed was directly inspired by what he had learned from the text (which has nothing explicitly to do with music whatsoever). After getting hold of the book he said to David Whitaker in an interview:

> "*I was very, very impressed by it. I can still remember chunks of it verbatim. Then in 1975 I wrote an essay… in which I quoted from Stafford's book quite extensively. People were quite baffled by what I was saying. I've met people since who went to those lectures who tell me they had absolutely no idea what I was talking about or why I was bothering with it.*" (Whittaker, 2003)

Later he went on to say "*everything I did from 1975 was to some extent informed by him* [Beer]. *'Music for Airports' is a pure example of a systems record: set a few things in motion and record the result.*" (Whittaker, 2003)

diagnostic tool which he had begun to investigate himself, and Phillips introduced the model to Cloughjordan before inviting Walker to guide their implementation of it.

- Thirdly, the formation of *cybernetic priesthoods* within these organisations. While these often-self-taught experts help to reinforce the model in the organisation in the short term, they may end up having a detrimental effect on the VSM's continued popularity within the organisation if fatigue begins to set in among members. Furthermore, if participation in the use of the VSM is perceived as exclusionary or inaccessible to some members, this may negatively impact the extent to which participants feel able to democratically participate in the organisation.

This research suggests that the democratic implementation of cybernetics is partially dependent on at least these three categories of experts, some of which seem more problematic for democratic practice than others. This suggests that Espinosa's *"holy grail"* of cybernetics; the ability of democratic groups to independently learn the VSM through its easily understood articulation (discussed further below), may be unattainable without the guidance of one or more of these experts (or its conveyance in significantly *eased* language). This leads me to argue that democratically applied cybernetics remains troubled by the technical language and discourse it emerged from. These troubles are less a consequence of assumptions at the core of cybernetics or the VSM itself, but the technical and inaccessible vocabulary with which it is articulated and presented. This has played an immediate role in the emergence of both *cybernetic priesthoods* and *VSM fatigue*, the undoing of which should be approached through an attempt to 'democratise' the language with which cybernetics models like the VSM are articulated: a solution which will later emerge in the form of *low cybernetics*.

4.6 Participating in understanding cybernetics

Thus far this chapter has focused on limitations to the effective application of the VSM to democratic and participatory organisations. I have said that cybernetic models like the VSM are very complicated systems which take considerable time and effort to become fluent in. I also argued that participatory organisations, as I understand them, require the participation of members and therefore a fluent understanding of the governance and diagnostic systems they employ in their self-governance. This leads me to ask, under what conditions can a participatory group have a relatively evenly distributed understanding of models like the VSM, so that shared governance can be sustained? Furthermore, are there limits to the extent to which an even distribution of knowledge is required for democratic governance? The final part of this chapter discusses two potential exceptions to this tendency towards inaccessibility, the first of which constitutes an exception to the rule, while the second suggests a limit to the extent to which evenly distributed knowledge is both feasible and desirable.

4.6.1 Design groups

First, in the two smaller groups I investigated during this research, a relatively even distribution of interest and knowledge was shared by participants based on overlapping areas of interest and expertise, as well as divergent areas of expertise which can be mutually understood through the shared use of cybernetic concepts. For example, my work alongside Lauren and Jim on HG's Hive project often involved in depth discussions about cybernetic concepts and models during our meetings which subsequently informed our approach as a group. Those discussions contributed to the design of both our own organisational structure and the product we were designing. Often these discussions did not concern cybernetic models in isolation, but the use of those concepts and models to elucidate the commonalities between a range of diverse disciplines; whether social, organic, technical, or whatever else. Lauren

emphasised HG's shared use of cybernetic vocabulary as a common language for understanding our own practices, particularly in relation to a shared emphasis on worker autonomy:

> "*I think it's the idea of autonomy, our autonomous nature, which has been inspired by the idea… or perhaps it has been us being autonomous that has made us look towards cybernetics as a heuristic of how we should operate. Because it works, or maybe the framework seems to align with the way we already work. So, it's a pattern that seems to have worked and had a strong influence on us. Maybe because of both reasons: we're already doing that, and also the pattern just works for us. I can't really pinpoint why we decided to apply these principles, I think we just resonated with it. We had a good understanding of how it works on an intuitive level and on a group level. And I think also understanding the pattern helps you to see these patterns everywhere. We can see how these patterns exist in nature, in natural systems in general.*" (Lauren, interview 1)

The productivity of these discussions seemed dependent on each of us having a shared background in systems and cybernetic thinking, and importantly on its influence on other subjects about which we had independent interests. In this sense cybernetics was used as a common language with which to discuss a wide range of distinct subjects in a commonly understood framework. Our shared grasp of cybernetic ways of speaking functioned as a mediating language, allowing us to talk in common terms about subjects we might not otherwise be able to easily grasp. Lauren's interest in software engineering, Jim's expertise in neurophysiology and my interest in the organisational implications of cybernetics on democracy were not specialities that the entire group shared, but our shared grasp of cybernetic vocabulary allowed us to discuss these subjects with relative ease through a commonly understood vocabulary.

Several qualifiers should be added to this claim. First, the outside involvement of an expert remained a small yet notable factor in our shared familiarity with cybernetics: although we all

shared a pre-existing interest in the subject, our shared two-day course (which was kindly offered by Trevor Hilder) contributed to reinforcing a shared cybernetic vocabulary among the group. This suggests that even in small groups who are familiar with cybernetic terminology, group discussions with experts may be valuable to developing a shared fluency in the subject. Second, and more problematically, as was briefly discussed in our methodology chapter, a fourth member of HG, Dave, whose involvement was focused on HG's second project named S2, didn't share the same familiarity with cybernetic nomenclature. While he participated in the short course with Hilder and was a participant in many of the other early discussions we had, in which cybernetics and other subjects were discussed, he did not seem to share the same intuitive interest and passion for the subject. Like the rest of us, Dave had his own areas of speciality which concerned several types of complex systems (particularly in horticulture, biology, and cryptocurrency design) but these specialities were rarely articulated through cybernetic terminology. This led me to feel concerned that the common language which improved our capacity to understand each other was, for Dave, a roadblock to gaining such a shared understanding.[46]

I also found a shared ability to discuss a diverse range of subjects in a common language in CK, though it was less consistently discussed in explicitly cybernetic terminology. Their shared focus on the intersection between technology and political organisation provides a shared area of concern about which cybernetics has much to contribute, as Mark emphasised:

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[46] This reiterates the above-mentioned idea of *cybernetic intuition*. While many of the participants I spoke with had an intuitive sense of the potential for cybernetics to bring divergent disciplines into a commonly understood language, others had the opposite feeling, experiencing cybernetics as a barrier to *participatory clarity*. This was the case despite Dave being passionate about many technological ideas and subjects related to permaculture, showing that even within subjects associated with cybernetics the language linking them together can be unevenly latched on to. This may result in the use of cybernetic language having the opposite of its intended effect, at worst leading to participants feeling excluded from discussions and less able to actively participate. Here the introduction of cybernetic parlance becomes something of a gamble, in which a familiarity with a shared cybernetic vocabulary may, on the one hand, make those who intuitively grasp it feeling more capable to discuss a wide range of other complex subjects on an equal footing, while on the other it may result in some participants feeling less able to participate in those discussions.

"*It's almost like it's one of the secret bits of Common Knowledge that we don't really talk about much publicly, but if you met us for five minutes, you'd realise that we're [all] about. Which is about, you know, notions of self-organisation and then notions of the potentiality of a left cybernetics, basically. Which historically, is actually existing in Chile so and so forth. This has been a continuous thing for us, at the level of influence. And then I guess that pragmatic level, I think that cybernetics... Basically a lot of the systems, a lot of the approaches that we do day-to-day are 2nd order influenced by cybernetics... both sociocratic decision making, which is what we use every single day, like literally every meeting will use that… And you know also in agile, the techniques of Scrum. Like if you read a lot of the early extreme programming literature, which is where a lot of this stuff from Scrum comes from, you'll look at the references in the back and they'll be cybernetics basically. So, I feel that we've kind of had this almost pragmatic 2nd order interaction with cybernetics. It's been a big part of our history as well.*" (Mark, interview 1)

While CK had a sense of cybernetics offering a shared framework with which to discuss systems and design, it was not perceived as the only vocabulary appropriate for the role. Jenny argued that while she shares an interest in cybernetics, she thinks of her way of thinking more in terms of ecological, rather than cybernetic terminology:

"*I was super interested in [cybernetics] when I first met [Jack] and [Mark], and that was one of the things where it was like "cool, we're all thinking about the same stuff". I think since then I've got much more into an ecological way of thinking about things. And rather than using metaphors of machines, thinking about ecologies and emergence and cybernetics in the natural world. But it's the same kind of vibe, I'm just reading different books now.*" (Jenny, interview 1)

The relatively even distribution of cybernetic knowledge observed in both CK and in HG's Hive project shows that the technocratic inaccessibility of cybernetics is not an inevitability within democratic environments, particularly in small groups of only a handful of participants. On the other hand, I found evidence that even in such small groups the possibility of some participants finding the subject inaccessible remained, resulting in the vocabulary being

counter-productive in situations where some participants do not share what I have called *cybernetic intuition*.

4.6.2 Operative understanding

While small groups may be able to use cybernetics effectively during governance discussions, most organisations require many more people and infrastructures to fulfil their purposes. More participants and bigger organisations result in more organisational complexity, posing a greater challenge to the application of cybernetics to democratic organisations; especially in the light of the emergence of *cybernetic priesthoods* and *VSM fatigue*. When concerns about the inaccessibility of cybernetics at Suma and Cloughjordan emerged from my discussions with Walker and Phillips (during separate conversations), both argued that there were limits to the extent to which participants needed a comprehensive and shared understanding of their governance system and the models upon which they were based. Phillips said:

> "*In our farm, which does use a dynamic governance explicitly, a lot of Members don't understand it, and maybe they don't need to. As I said before, you don't need to be a good engineer or architect to live in a really well-designed, low-impact equal house… You can just live in the house, and you know how to operate it. So, it's not like you have to have a deep philosophical understanding of cybernetics to operate in a cybernetically designed entity or organisation*" (Phillips, interview 2)

Walker made a similar point about cybernetic systems, claiming:

> "*it's a bit like if you want a washing machine you don't have to understand all the technology behind it, you just need to know it's a washing machine that works and does the job.*" (Walker, interview 4)

Additionally, Phillips argued that some members of the Cloughjordan community had little interest in the governance practices of the community, so long as those systems worked smoothly and evaded crisis:

"These are people who think that the Board should do everything, and the voluntary engagement and participation doesn't work, and the small groups don't work. So, there's some strange perspectives of the people that are holding that [anti-cybernetics] *perspective. And that's also me projecting a little as well."* (Phillips, interview 2)

Beer too, in *Beyond Dispute*, made a similar point while mulling over the benefits and drawbacks of providing participants with an explanation of his complex and specialised TS protocol prior to the group's use of it:

"People can rather easily be manipulated by protocols they do not understand, and the rubric of cults offer sufficient instances. On the other hand, people are content, in many cases, as with religions they count as benign, or with the whole industry of sport, to become parts of a 'human machine' whose functioning they do not fully understand."
(Beer, 1994, p47)

A system which is easy to operate often does not require a detailed understanding of its inner logics and workings. One might even say that a well-designed cybernetic system relieves its users from needing to understand it. Take, for example, the oft used example of the rules of the road. The near unimaginable complexity of all the cars on a city's roads, going in different direction at different speeds with different drivers, is difficult to comprehend. Despite this, operating the road requires only a few simple rules to be followed to navigate the city safely (such as stay to the left, stop at red lights, give way, etc). A second example might be the use of a smartphone. The complex and expert-based technologies that contribute to the design of such a device is enormous, but its operation requires little more than the use of a simple touch screen and a single button. Speaking of the ambivalence people have regarding their proclaimed need to understand the systems they use, Beer argued:

"The interesting thing is that a majority (perhaps) of automobile dominators do not understand exactly how those machines of theirs work, and yet use a similar ignorance of the computer's viscera to explain their distrust of it." (Beer, 1993, p33)

This distinction between the design and use of a system clarifies two distinct ways in which cybernetics might be used in democratic organisations. Designing systems requires grasping the deeply complex theoretical basis of cybernetics and the interlinking subjects that make the design possible, whereas the use of such a system, especially when it has been designed well, requires a far simpler understanding of the system, based specifically on how to make it operate, rather than what makes it tick under the hood. I therefore separate the smaller design-based groups mentioned above (CK and HG) from the larger organisations which operationalise those models without all participating in their design (such as Suma, Cloughjordan, and PK). The former requires a complex, or *"high variety"*, understanding of the models and systems they utilise, whereas the latter requires a simpler or 'low variety' means of interacting with that system:

> "*You know, if you're designing any sort of machine, you know if you're designing a washing machine, or any piece of equipment or a computer, you need an extraordinarily high variety understanding of how the thing works, but once you designed it and set it up and you give it to somebody to use… I mean the use of it is different altogether.*" (Walker, interview 4)

This argument suggests that what is at stake in the democratic utilisation of cybernetics has less to do with the participants having a knowledge of the theoretical underpinnings of a system and more to do with their ability to operate on the organisation and participate in its functioning. The democratic application of the VSM requires the ability to facilitate democratic governance *operationally* through easily understood means of intervention in governance, which sidesteps the inaccessible complexities of the VSM and other complex cybernetic models. More important than ensuring that members of a democratic organisation understand the ins and outs of how the organisational model works, is that they know the ways in which they can operate it and understand the implications of their interventions. This argument posits that understanding a system at a technical level is not strictly a requirement of democratically

operating within a cybernetic system, whereas simple, clear, and concise knowledge of how to operate that system is. I will return to this argument in a later chapter and look at in the light of my discussion of Rancièrian politics (see section 8.2.2). However, for now I argue that gaining an operational understanding of systems like the VSM is at least a *minimum* requirement of its autonomous use. Knowing how to operate a car is a minimum requirement for being able to use it, but it may not always be sufficient, depending on the use the system is being put to. The ability to maintain a car requires skills which extend beyond its mere operation but may be required for it to be used over the long term (or otherwise rely on the intervention from expert mechanics).[47]

This leads me to suggest that at times not only the operation but also the design of systems is important for their informed use. This, I argue, applies to democratic contexts in which members decide what governance processes they will use. While acknowledging Phillips' observation that some members of democratic communities may not wish to be so deeply involved in questions concerning the merits and drawbacks of design choices, it remains the case that members of democratic communities do actively participate in such discussions and see it as a core component of democratic participation. Evidence of this can be found across all my case study organisations, most explicitly in the discussion at Suma which has been discussed during this chapter. The conversation itself takes place on the assumption that members of Suma should be encouraged to participate in discussions concerning the design of the organisation of which they are a part. PK too, had frequent in-depth discussions about the design of their organisation and the design of the systems which allow them to self-govern as a collective. As was introduced above, their OS system was articulated with a strong emphasis on making its components easy to understand, so that discussions could be had among those

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[47] Similarly, operating a phone does not require knowledge of its design, but such knowledge is arguably necessary for its informed use; being knowledgeable of the material components it is made up of (and their sources), or the psychologically addictive effects of the phone's design, for example.

both within the collective and outside. This leads PK to emphasise the use of direct and unambiguous language to ensure that all members, no matter their backgrounds, can easily participate in both questions of operation and design of the collective.

We therefore suggest that organisational decision-making, while ordinarily concerning the operation of governance systems, may also concern questions of its design, about which participants may want to play a part. My findings throughout this chapter thus far suggest that those who lack what I call *cybernetic intuition* are likely to feel unable to participate in decisions pertaining to the design of a particular governance system, limiting their ability to democratically participate in design-based questions. If we are to avoid the danger of excluding those who want to participate in questions of design, but who do not find cybernetic language intuitively easy to grasp, then the democratic application of cybernetics requires that effort be put into re-articulating those concepts and models in ways which are more easily grasped by general audiences. This, I call *low cybernetics*.

4.7 Concluding remarks

This chapter has discussed the complicated relationship between the VSM and its application to democratic organisations. I have especially focused on the complexity of cybernetics and the models it produces, and the sometimes-problematic implications this has on the subject's application to democratic contexts. The democratic prioritisation of *participatory clarity* has an uneasy relationship with what I have called *cybernetic intuition*, which leads to some participants becoming inspired and impassioned about cybernetic theory, while others find it inaccessible. I drew connections between the uneven distribution of the cybernetic intuition and the emergence of, on the one hand, *fatigue* regarding the VSM and cybernetics in general and, on the other, *priesthoods* developing which can function as technocratic groups within an organisation who are difficult for other participants to dissent from, due to their fluency in cybernetic governance models and language.

This led me to suggest that efforts should be made to ensure that cybernetic models, and the language that comes with them, be put into forms which are more easily understood and more accessible to those who are not intuitively at ease with cybernetic vocabulary. Unless accessibility to the ideas upon which these models are based can be provided to a wider range of participants, the potential for cybernetics to be applied democratically will remain limited by its reliance on expert intervention. This problem will stay with these findings throughout the next several findings chapters, leading me to propose a way of thinking about how the complexity of cybernetics can become more aligned with the participatory clarity I have come to identify with democratic organising. Before that, however, I will discuss two major tensions that emerged from this research regarding the relationship between cybernetics and democracy, which clarify some friction between the subjects. Mindfulness of these tensions and the cautious negotiation of them, I argue, provides the opportunity for their amelioration while accepting the continued uneasy relationship between cybernetics and democracy.

4.7.1 Key contributions from the chapter

This chapter has provided empirical evidence of a wide variety of responses to cybernetic language, including much interest and enthusiasm regarding its implications for democratic groups, as well as negative reactions to it, whether they emerge from well-founded concerns or from a more reactionary hostility to systems thinking in general or cybernetic models in particular. I have also shown that difficulties tend to emerge in communicating and sustaining cybernetic language within democratic organisations over the long term. While these are sometimes the result of misinterpretations and mischaracterisations of cybernetics, they are also indicative of the inaccessibility and technicality of cybernetic language, which can act as a barrier to shared comprehension of cybernetic models within democratic organisations. This can lead to knowledge inequalities within the organisation, which negatively impact the capacity of all participants to contribute to self-governance. In the chapters which follow I will show that, while difficult to resolve, these issues with cybernetic language are ameliorable, given their appropriate expression. The chapter also argued that while a shared *operative* understanding of cybernetics is necessary within democratic-cybernetic organisations, it is not sufficient to allow all members to contribute critically to shared governance processes. Critical self-governance requires that members can understand and criticise the *design* of the organisation itself, as well as operate within it. This finding provides further evidence that more appropriate means of expressing cybernetic concepts and models are required for cybernetics to be effectively sustained within democratic spaces over time.

Chapter 5 (Findings 2): tensions in the pedagogy and communication of democratic cybernetics

"All this is very easy to do inside any firm, and it is an interesting question to ask who ought to do it. Our rather technocratic culture immediately answers: a team of engineers, or accountants, or operational research men. Well, I don't believe it. That just is not necessary; and besides no one will really be interested in the model they create. The people who know what the flows are really like are the people who work in the middle of them: the work-people themselves. And if their interest can be captured in putting together the total model of how the firm really works, we shall have some genuine worker participation to replace a lot of talk about worker participation." (Beer, 1993, p25)

"but people do not know that there is a science of effective organisation, and you are likely to be disbarred by those who run institutions for proposing any theory at all. For what these people say is that their own institution is unique; and that therefore an apple-growing company bears no resemblance to a company manufacturing water glasses or to an airline flying aeroplanes." (Beer, 1993, p12)

5.1 Introduction

The preceding chapter discussed some of the challenges involved in effectively communicating organisational cybernetics in democratic and participatory organisations. I argued that the language that cybernetics tends to be expressed in stands in tension with the communicative approach democratic organisations tend towards: *participatory clarity*. I also argued that both *cybernetic priesthoods* and the development of *VSM fatigue* can be explained by the complex and often inaccessible language with which cybernetics is expressed.

5.1.1 Cybernetic intuition and democratic pedagogy

The case studies I investigated showed that some members of democratic groups latch on to cybernetic language with ease and grasp what they perceive to be its strong potential for democratic organising. Many of the key characters I have discussed so far see democratic and organisational potential in cybernetics and have a fervent desire to apply it. On the other hand, others have developed fatigue towards the VSM and cybernetics in general, and I have noted a variety of negative responses to cybernetics which often revolve around the perception of it being overly complex and tending towards technocracy. Beer himself seems to allude to similar findings when he discussed responses he encountered when explaining TS's reliance on the icosahedron to managers:

> *"Some management people are enraptured by the icosahedron: the verb is not too strong. It seems to open new vistas for them. Others are left completely cold: the phrase 'silly toy' seems to be visible in the balloon above their heads."* (Beer, 1994, p47)

There exists a tension between those who possess a passionate intuition for cybernetics on the one hand and the participative clarity tended towards by democratic organisations on the other. The former seems to emerge readily but unevenly, while the latter is far more desirable, but out of step with much of the existing cybernetic language.

5.1.2 Cybernetic invariance and contextuality

In addition to developing the above stated challenge this chapter will introduce a second key tension in the application of cybernetics to democratic organisations, which is interrelated with, but distinct from, the first. Two distinct understandings of cybernetics, and the means by which it is operationalised, will be presented, which complicate attempts to conceive of democratic cybernetics. First, cybernetics is concerned with the identification of consistent principles and mechanisms which operate within a diverse variety of complex systems, irrespective of their specific properties. Beer describes these *invariances* as *"the laws of control itself"* and argues that they can be *"invoked in the design of any controlling mechanism of any system"* (Beer, 1995, p84). In this sense cybernetics can be understood as producing highly generalisable, even universal organisational principles which can be applied to a variety of contexts irrespective of their particularities. When these invariants are identified, Beer states, *"we are entitled to be excited by a possible advance in human understanding of the natural world and to seek out further examples."* (Beer, 1994, p13)

On the other hand, cybernetics has to do with the production of situated models which operate and behave appropriately in their contexts. While they might be built on generalisable principles a sensitivity and responsiveness to their environment, the adaptation of a system in response to its contextual circumstances, is in-keeping with the ontological orientation of cybernetics (Pickering, 2010). For Pickering, cybernetics is characterised more by the production of situated objects which 'stage' or perform cybernetic hypotheses than it is with the articulation of abstract universal principles: this, he calls the *"ontological theatre"* of cybernetic objects (Pickering, 2010, p17). While universality might describe cybernetic ideas in the abstract, adaptation to one's context and specificity in response to environmental contexts is arguably more in-line with the practice of cybernetics. This chapter will explore the tension between these two interpretations of cybernetics, as situated/contextual on the one

hand, and universal/invariant on the other. I will consider what impact this relationship has on cybernetics' relationship with democratic organisations.

I will refer to PK's OS as an example of a one-off governance system that is highly adaptive and specific to its context (while being designed in a way that it can be adapted, spread, and reapplied to new contexts) and contrast this with the invariant VSM structure. I will argue that the application of cybernetics to democratic organisations requires a sensitivity to the contextual particularity of that situation. Indeed, I will show that any cybernetic model will bring with it some of the contextual characteristics of the environment it is applied to and emerges from.[48] PK's OS and sociocracy emerged out of, and are consequently adapted to, democratic contexts.[49] These models show that a sensitivity to contextual specificity produces models which are appropriate and clear to democratic practitioners. Contextual sensitivity to the communication of cybernetics can lead to expressions of it which are more pedagogically democratic by virtue of them being tailored to the specific aims and goals of the democratic organisation to which it is applied.[50]

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[48] In the context of the VSM I observe the impact of both the diagnostic & scientific discourse of neuroscience (based, as it is, on the structure of the brain) and the managerial language of the audience to whom it was primarily directed. Both discursive contexts' present challenges to the re-contextualisation of cybernetics to democratic and non-scientific audiences.

[49] In-line with the tendencies I identified in the previous chapter, they express ideas in relatively concise and simple language and include practices specifically developed with groups of equal decision-makers in mind.

[50] This chapter will not resolve either of the two tensions it exposes in the democratic application of cybernetics. Instead, I will suggest that a sensitivity to these tensions will aid theorists and practitioners in the effective application of cybernetics to democratic contexts. These tensions, and my attempt to sketch a specifically democratic response to them, will lead me to argue in the next chapter for a *low cybernetics*; one capable of reformulating cybernetics into a form conducive to the participatory clarity required within democratic organisations.

5.2 Cybernetic intuition and democratic pedagogy

5.2.1 Insufficiency of cybernetic intuition.

In the previous chapter I noted that the VSM's complexity has sometimes got in the way of it being understood relatively equally by its members, and that this has had serious implications for the sustainability of implementing the model in democratic contexts. In organisations where the organisational model is dependent on the support, participation and comprehension of the group's members, this inaccessibility may be detrimental. I showed in the last chapter that both Suma and Cloughjordan's turn away from the VSM was in part a result of the perceived concentration of power into *priesthoods* who emerged because of the terminologically dense language of the VSM and Beerian cybernetics. The intuitive investment in cybernetics by some, and the paralleled struggle to grasp it at all by others (sometimes leading to its outright rejection), amounts to a tension regarding the application of cybernetics to democratic groups. The successful application of cybernetic theory to democratic groups is dependent, I argue, on the ability of *whole* groups to operate (and understand the design of) the system with minimal intervention from experts who have what I call a *cybernetic intuition*, whether in the form of consultants, especially well-informed members, or whoever else. Without the ability to operate a system independently of expert support the democratic implementation of cybernetics is limited.

Problematically, it is not clear how the VSM might be presented to a group of people in such a way that they would be able to operate it independently of expert guidance.[51] The same is much more obviously true for Beer's TS process, which explicitly required significant facilitation to merely perform, and would require a sophisticated understanding of Fullerian

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[51] Though possible alternative presentations will be suggested in the next chapter.

mathematics to understand at its base.[52] Such systems were designed with facilitators in mind, and books about these systems were typically aimed at readers with expertise in the technical ideas upon which they were based. How might these systems be utilised by groups without the funding or resources to regularly pay consultants to reinforce the model (or the good fortune to have Walker and Espinosa offer to provide the service)? In short, I want to enquire as to whether cybernetic models like TS and the VSM can be communicated to groups in such a way that:

- They are easy for the group to understand, follow, and retain a workable understanding of the model in question.

- The group can operate the model with minimal intervention from experts.

If an incarnation of cybernetics can be articulated which fulfils these criteria and still conveys the meaning of cybernetic models, concepts and ways of thinking effectively, I might say that a *democratic pedagogy* of cybernetics has been reached, or to put it another way, cybernetics has been articulated with the *participatory clarity* which it has tended to lack. While these criteria provide a challenge to the democratic implementation of organisational cybernetics in general, I will primarily focus on the VSM as an example of an organisational model which has struggled to move from the *cybernetic intuition* of a few members towards the *democratic pedagogy* of a whole group. These considerations of the pedagogy of cybernetics to democratic

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[52] Beer considered the merits and drawbacks of explaining the mathematics of the icosahedron shape to participants using TS, harking back to Walker and Phillip' arguments regarding the drawback and merits of explaining the details of models to their participants:

> *"Well of course, it is not necessary to explain the geodesic foundations of Team Syntegrity at all. Once a firm protocol is established, the geometry is self-generating. Indeed, the protocol could be embodied in a software package. An Infoset could then put itself through the programme, just as a clerk may press a key to read out a standard deviation without defining variance, or a person may drive a car without knowing how internal combustion actually works."* (Beer, 1994, p47)

groups will foreshadow the next chapters discussion of a democratic language of *low cybernetics*.

5.2.2 Less technical application in Suma (*The meta-systemic doughnut*)

As I mentioned in the previous chapter, Walker argued that the process of introducing Suma and Cloughjordan to the VSM was quite different and had emerged out of distinct organisational contexts. The former emerged as a particular solution to the organisational problems Suma was having and that Walker (along with three other members of the organisation) had been tasked with resolving. The latter project began after members of the Cloughjordan community discovered the VSM themselves and wanted to implement it, inviting Espinosa and Walker to teach them the model as outside experts. These differences led to the language of the VSM being used distinctly in both cases. At Suma no one initially knew the model well, including Walker himself, leading to them avoiding the use of technical language or even a comprehensive outline of the model, as was discussed above (see section 4.4.3). Rather than focusing on the VSM model itself, the participants at Suma began to talk about a metaphor of their own. Walker describes how this idiosyncratic metaphor led to discussions that aligned with key questions dealt with by the VSM:

> "*One of the guys we were working with said "the key to this is that we've got all these…"*
> *he described them as "segments", and he drew this shape, which was a doughnut. Have*
> *I mentioned the doughnuts? The doughnuts became quite famous for a while in co-op*
> *circles. I always really loved it because doughnuts are about as sugary and sweet and*
> *as disgusting as you can imagine. No one at Suma would go near them. You know, it*
> *could have been an apple ring or something organic, but we drew this doughnut and*
> *made it into segments, and said "Okay, these are the autonomous working groups".*
> *The question is how you hold them together, and the big question is what's in the middle*
> *of the doughnut? Everybody was just talking about the middle of the doughnut for weeks*
> *and weeks and weeks, which was great you know because it got over the whole thing*
> *about describing a meta-system."* (Walker, interview 6)

The doughnut metaphor had an ironic connection to the cooperative, concerning a notably unhealthy junk food which contrasted with the healthy food Suma produced. More important than this was the fact that the image had emerged contextually from Suma's internal discussions. The group had found their own way to the doughnut as a way of understanding the distinction between system and meta-system without the guidance of expertise.[53] Other, more conventional managerial techniques such as the use of KPIs made a significant impact on the reorganisation of Suma. Walker contrasted his job at Suma, which was *"just to reorganise using whatever ideas we could come up with"* with the situation at Cloughjordan, where he and Espinosa had been "*told to come and do a VSM job"* (Walker, interview 6). The doughnut example provides a glimpse into how organisational cybernetics can be used in a way that sidesteps the inaccessible technicality that eventually led to the development of priesthoods and fatigue regarding cybernetics (various other examples will be presented as we progress).

During the same interview, however, Walker drew attention to the danger of completely sidestepping the model beneath the strategies, showing that it can lead to the organisation being unable to implement compatible solutions in the future:

> "*I think the important thing is that if you can get people to understand the basic principles as times change, they can adapt their structures to the new situation. Whereas if you say "okay we're in this situation, here's the answer, this is what we do now" when things change you wouldn't know what to do. So, certainly in the long run it's better to train people with the ideas and get them to understand the basic principles. Angela now talks about a self-transformational methodology (STM). Which is: we go in and we train people in the VSM so they can then transform themselves continuously to have an effective structure, regardless of the sort of environment they're working in."* (Walker, interview 6)

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[53] Discussion of the 'meta-systemic doughnut' continues in the next chapter (see section 6.5.2).

Can a balance be drawn between an approach which avoids some of the VSMs terminological inaccessibility, and one that teaches participants the structure of a model so that its implications can be applied to future problems? On the one hand, we want to keep the complexities of the model minimal to avoid overwhelming the participants with technicalities of an inaccessible model. On the other, we need to provide the participants with an understanding of the model that is concrete enough that the ideas at work can be applied to future situations and used in general.

5.2.3 Walker's focus on simple expressions of cybernetic invariances

Developing a *democratic pedagogy* of organisational cybernetics must confront the challenge of articulating cybernetics in language which is contextually relevant to the organisation in question, like the doughnut example above, while conveying it in such a way that an organisation's participants can easily delineate its underlying structure. Ideally, a democratic pedagogy of cybernetics would enable groups to teach *themselves* the model without the continuous support of experts, whether internal or external to the organisation in question. This high goal is seen by Espinosa as *"the holy grail"* of cybernetics and is a subject that Metaphorum regularly discuss:

> "*So, what's interesting about the work you're doing is that the 'holy grail' for us is a way of presenting in the VSM which is accessible, easy to understand and non-trivial."*
> (Espinosa, interview 1)

In some sense, much of Walker and Espinosa's case study work can be understood as centring around this problem. Their experience of articulating these ideas to a variety of democratic organisations can be drawn on as rich examples of techniques of conveying organisational cybernetics that balance the line between two threatening precipices of, on the one hand, expressing the model's full inaccessible complexity and, on the other, sidestepping

explanations of the model altogether; thereby losing the invariant structure the VSM aims to convey.

Walker provided me with several sets of slideshows which he has presented to various democratic organisations he and Espinosa have worked with (Walker, slideshow presentation series, 2022). During these presentations he emphasises key principles and oppositions in cybernetics which communicate important cybernetic principles in language which can be easily understood and remembered. Importantly, he discusses these key oppositions and concepts before introducing the VSM structure itself, attempting to provide background context to the model's rich and complex conceptual underpinnings.[54] Later, when these basic concepts and oppositions have been understood by participants, Walker begins to introduce the VSM model itself and the interrelated subsystems that make it up. While this approach to teaching remains a far cry from the eventual goal of enabling groups to teach the VSM to themselves, his pedagogic approach (and others such as Espinosa and Phillips) presents a way of teaching complex cybernetic models like the VSM which attempts to introduce its complexities gradually and over time, with the hopes that participants avoid getting overwhelmed by the overlapping concepts. This, I suggest, is a starting point to thinking about how groups might seek to teach the VSM to themselves. This process of introducing concepts gradually, beginning with more overarching and general oppositions before constructing the model itself, may be read as a proposed process for introducing cybernetics and the VSM to the uninitiated in such a way that its complexity can be gradually introduced. On the other it can equally be read as an indication of the dense glossary of concepts required to gain a

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[54] The opposition between *autonomy and synergy*, for example, Walker argues is key to understanding the VSM, particularly in a non-hierarchical and democratic context. Early into his work with a case study group, Walker told me, he introduces the concept of *viability* and the key relationship between an organisation and its *environment*. As discussions progress, he introduces less simple concepts to the participants, like *recursion* and the distinction between *system and meta-system*. The VSM model itself is rarely mentioned in early discussions with democratic groups.

comprehensive understanding of the model and as an indication of the work required to learn cybernetics' conceptual vocabulary. A more elementary indication of how teaching cybernetics might be done in terms of easy-to-follow concepts and ideas emerged from my discussion with Thomas Swann. He put the idea in even more stark terms, saying:

> "*A lot of discussions do seem to come back to how to communicate* [the VSM] *effectively. Since the early 70s these people have been working on it* [and] *I find it interesting that they've not hit on a way to communicate it effectively. Because really you want to be able to communicate it to children, right? You want to be able to go to primary school children and have some way of communicating this. That they can go "yes that makes sense, I understand that." It kind of has to be that simple, I think. Not to dumb it down, but I think you can go to a primary school class and explain democracy in general terms. And people go "that makes sense, people should be able to decide on how things are run" and you can explain things like voting, and they go "yeah that makes sense, I understand voting".*
>
> *So, it's like the ideas have to be simplified to that level where it's just so easy to grab instantly and go "yes that makes sense, I get it."* [I have] *no idea how to do that,* [but] *I think renaming things is a really important part of it."* (Swann, interview 1)

This is the easiest way of summarising my proposed approach regarding the *easing* of cybernetic pedagogy: the use of simple and clear metaphors and the ability to outline a concept in one or two easily understood sentences. Doing so is likely to be a big step in the direction of articulating democratic cybernetics with the *participatory clarity* it requires and suggests a path for the greater challenge of enabling the *democratic pedagogy*, the self-teaching, of cybernetics. Swann suggested the metaphorical relation between the brain and the body as an example of an eased introduction to the VSM:

> "*I think the thing that is potentially a sticking point for a lot of people, but it's probably very useful, is the analogy with the brain and the body. People kind of know how their bodies work. They know that there are different organs that do different things. They know that they've got a brain that does some thinking stuff and even very, very young children know that there are some connections between these things. They might not*

know what a nervous system is, but they know there is some connection between your heart and your lungs and your stomach and your brain and things like that.

So that gives you an incredibly powerful analogy, I think, because you can say "well look how well the human body works" right? Human bodies can put up with a huge amount of change just in terms of the temperatures and stuff like that. Huge amounts of conflict, huge amounts of trauma. Clearly the human body works incredibly effectively as a system. So maybe that is the way to go and say what this is.

And Beer does that very early on in Brain of the Firm, but I think that's been rejected in a lot of circles because it's seen as a sort of very functionalistic approach that then has connotations of sort of technocracy and fascism, even. So, it's kind of been vilified." (Swann, interview 1)

As Swann suggests, metaphors are never neutral and have their own implications which might conflict with the associations the pedagogue intends to emphasise. This should be remembered when using an easily understood metaphor to outline a complex model. Some might, for example, understand the relation between the head and the body to be one in which the head is 'in control' of the body, an assumption which significantly undermines the emphasis the model places on the autonomy of the body. For example, a group of managers would interpret this metaphor quite differently from a group of school children, who would interpret it differently from a group of democratic organisers. These kinds of clarifications and ambiguities are vital if the use of 'shortcuts' to understanding such a model are not to result in misapprehension, or even further entrenchment of presumptions, by its audience. During the next chapter I will return to these themes, discussing (1) the simple use of metaphor, (2) the impact of metaphor on the model, and (3) the use of 'shortcuts' to convey these models with ease.

5.2.4 Different languages of expression? - performance, diagram, team exercise, etc.

Another example of how we might approach *easing* the process of teaching the VSM comes from two projects devised by Espinosa and other researchers (Espinosa, 2018). The first case

involved an Indigenous Amazonian community in which C. Duque and Espinosa aimed to help the group understand interconnected issues of governance in their community:

"[Duque] *really liked the VSM, she did very good work and we invented a project that was to use the VSM to guide a study about the traditional governance structures of these Indigenous* [people]. *And of course, we were not going to be able to teach them the VSM or talk to them about the VSM. Starting from the fact that they didn't speak in Spanish,* [which] *is the official language in Columbia. So, they have their own language, we were speaking in Spanish. But she had a translator, and she had a team of anthropologists working with them.*

So, what we did was, I had developed some basic questions about the different roles of the VSM and interaction between roles. **We translated these questions to very, very simple language, very intuitive language** *and then she started going to the workshops in the jungle with these Indigenous* [people] *and she asked them the questions and then she asked them to* **respond to the questions in drawings.** *So, they were drawing their main governance issues. They were drawing the conflicts between their religious leaders and their ethical leaders and the political leaders with the representatives from the communities, and the questions and dilemmas in the families between the children with the new generation and the parents. All sorts of really interesting stuff... It was a fascinating project which lasted for a year, and then we ended up being able to do a VSM diagnosis of the governance issues of this tribe, and she discussed it with them, and they really liked some of the conclusions and they ended up implementing some of the conclusions."* (Espinosa, interview 1 [emphasis added])

Espinosa and Duque introduced the VSM to the group not through lectures or texts, but with simple questions and visual language to introduce ideas to the group through language that was meaningful for them. Another example Espinosa discussed involved a small and isolated Afro-Caribbean community:

"*So, another beautiful story, and in that case we did the same. My student used rich pictures and cartoons and even did some theatre. A little bit of performing, using the metaphor of the brain and the body... And* **they really liked the metaphor because that was part of their culture as well. They use these kinds of bodily, physiological**

> ***metaphors a lot in their culture**, so that fitted them very well. They accepted the ideas and they worked with the ideas very nicely, and that was another project that worked really well."* (Espinosa, interview 1 [emphasis added])

Espinosa understood the limits of these projects, but nonetheless she emphasised their impact as evidence that lessons and models from organisational cybernetics can be communicated clearly, concisely and (vitally) through a variety of different kinds of language:

> "*I mean, we cannot say that we change the history of these cultures, but there was empathy, there was understanding and there was a lot of passion and an interest in the ideas expressed in very simple forms. So those, for me, are three experiences that show it is possible to express the basic theory in simple words. It is possible. And when people manage to get the basic idea, the basic ideas are so powerful and so attractive that people really can engage, and they can become really useful for people.*" (Espinosa, interview 1)

These examples introduce some of the ways in which cybernetic models can be introduced to groups through various forms of communication which exceed the lectures and textbooks through which such ideas are customarily conveyed through. These models can be taught through performance, drawing, questions, and discussions, and so on. This wider range of communicative approaches might make cybernetic concepts more accessible to a wider range of people, most obviously for those using different languages or with customs which differ from those of the researchers. The exploration of different forms of communication, whether oral, written, performed or whatever else, constitutes a variety of communicative approaches which can be experimented with until a commonly understood language is found. Equally, approaching cybernetic pedagogy as something that can be communicated through forms of language which bypass an academic or scientific tone might be helpful for those who are not adept at interpreting academic texts or sitting through extensive lectures. In a sense, these examples bring to the fore the one note way in which cybernetics has tended to be articulated. Long, conceptually dense lectures or even longer books, filled with technical engineering

diagrams and conveyed in language only a scientist, manager or consultant are trained to comprehend with ease.

These alternative approaches to communicating cybernetic concepts indicate a diverse range of ways in which the ideas can be communicated and suggests that they can be discussed effectively with people who are not accustomed to 'systems thinking' or terminologically complex academic vocabulary. On the other hand, all the above-described examples fall short of resolving the two above stated components which would characterise a *democratic pedagogy* of cybernetics (see section 5.2.1). The complex, overlapping map of concepts which make up organisational cybernetics are still, through all the examples I have explored here, communicated by academic experts to a group. While these examples show that such communication is possible and, in some contexts, can be effective, it falls short of providing clear guidance regarding how the re-articulation of cybernetics can be done in more appropriate terms, or ones which remain viable in communities without the reinforcement and reiteration of those ideas by cybernetic experts. The next chapter will return to these examples and re-frame them (and others) as examples of *heuristic reformulations* of cybernetics, which might guide practitioners and theorists towards a more approachable understanding of cybernetics in terms of low theory.

5.2.5 From pedagogy to invariance

While the articulation of a *democratic pedagogy* of cybernetics remains elusive, the techniques presented here from Walker, Espinosa and others show that there are ways of communicating cybernetic ideas which minimise the academic, expert viewpoint with which it is conventionally associated. This may be one step towards conveying these ideas in a way that enables groups to learn, communicate, retain, and (most vitally) use these ideas independently (a theme I will return to in the next chapter).

Running through these examples is another tension which is just as important when considering how democratic groups might utilise organisational cybernetics for themselves, however. Through each of these examples there is a contrast between the generality, even universality, of the cybernetic concepts and models being presented, and the specific context of applying the ideas to democratic communities. Can cybernetics, understood by Beer to identify generalisable *invariances* in physical systems, be effectively directed towards the *contextual specificity* of these groups? Even more challengingly, can those groups hope to connect their situated contexts to invariant models like the VSM independently, or are experts required to implement the ideas extraneously?

5.2.6 Key contributions from cybernetic intuition-democratic pedagogy distinction

The first half of this chapter has explored some of the ways in which organisational cybernetics has been communicated to democratic groups and indicates that there are methods of effective expression of cybernetics to those groups. I did this by emphasising ways of communicating cybernetics which utilise altogether different forms of language and communication from the conventional engineering and biological language which it has often been associated with. These alternative methods of communication go some way to indicate the heuristic forms of communication which will be further expanded in the next chapter.

The exploration of *cybernetic intuition* revealed the tendency for cybernetic competence to be unequally distributed throughout democratic organisations, and *democratic pedagogy* amounts to an ideal towards which organisers and designers should aspire, in which the need for expert reinforcement is minimised. Until self-pedagogy of cybernetic models can be sustained over the long term, organisations are likely to remain dependent on the intervention and guidance of experts. The goal of enabling democratic pedagogy further demonstrates the need to develop a *low cybernetic* which can be developed and sustained independently of systems experts.

5.3 Invariance and contextuality

The previous section examined the tension between *cybernetic intuition* and the *democratic pedagogy* of cybernetics, considering strategies for conveying cybernetic models to whole democratic groups rather than only those with the strongest intuition for the subject. Characterised differently, these strategies can be understood as ways of re-contextualising the *invariances* identified by cybernetics into more democratic forms, so that they might become more obviously applicable to democratic environments. A second tension in the democratic application of cybernetics can be identified between the general, even universal mechanisms and models it seeks to delineate (such as the VSM) and the highly situated, *contextually specific* democratic environments I hope for it to be understood by.

We will briefly outline these two ways of understanding cybernetics before considering how both interpretations can be detected in the case studies that guided this research project. I will argue that a sensitivity to the specific contexts experienced in democratic organisation are essential to the appropriate application of cybernetics in democratic organising. On the other hand, a highly contextual approach to applying cybernetic models and theories only makes the democratic pedagogy of it harder to bring into focus.

5.3.1 Cybernetics as universal (identification of invariances)

Since its earliest developments at the Macy conferences cybernetics was approached as a means of bringing together the diverse range of both 'hard' and 'soft' sciences, developing a shared language through which they could all be understood. This led cybernetics to be understood as a highly generalised, even universal science, concerned with the identification of invariances in natural systems, the lessons of which can be applied to one subject as readily as the next. The identification of invariances in complex systems, understood as *"the laws of control* [themselves]*"* is one way of understanding the purpose of cybernetics (Beer, 1995,

p84). It identifies what is common to all systems, focusing on what they share rather than what differentiates them. Beer's process of identification and generalisation leads to cybernetics expanding an understanding of the natural world and helps to *"determine how the relevant mechanisms work"* (Beer, 1975, p105).[55]

This leaves cybernetics in an odd position in relation to my subject of enquiry: its application to democratic and participatory organisations. On the one hand, such organisations embody the same invariant properties that all complex systems do. Democratic organisations are impacted by LoRV, RoPC, homeostasis and runaway feedback just as much as other complex organisations, and a proper consideration of the implications of those properties is likely to assist organisational theorists and practitioners alike to organise more effectively. On the other hand, cybernetics is concerned with the study of *all* complex systems and as such it can only inform democratic practitioners of general invariances which affect democratic organisations *as well as* whatever other complex systems, limiting the specificity of the lessons it can impart. Cybernetics, understood as the study of invariances, cannot provide contextually specific guidance regarding the circumstances experienced by democratic groups because it is concerned with identifying properties which are invariant across all systems, irrespective of whether they are made up of people, never mind democratically organised people. I ask, therefore, to what extent the implications of cybernetics (as invariance) are limited in their usefulness for democratically governed organisations. Are the lessons of cybernetics too general to say much of value to democratic governance problems specifically?

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[55] Here, Beer summarises the role cybernetics has in producing generalisable mechanisms capable of being applied to any kind of complex system:

> *"If these are the common characteristics of large viable systems, then cybernetics sets itself to determine how the relevant mechanisms work. Having understood something about mechanism, science may then be relied upon to generalize its understanding—across the various types of system that it studies. This process leads to concepts of law, whereby science makes a further generalization: we expect that any new complex viable system that is going to survive will be found to utilize the generalized mechanisms of survival already elicited."* (Beer, 1975, p105)

If the VSM is taken as an example, I have already discussed the fact that the model has some limitations in the specific context of democratic organisations, as was shown when Walker claimed earlier that you *"are expected to work it out for yourself"* (Coulthard, 2013). It has no inbuilt or recommended decision-making process, as was mentioned by Phillips, apart from Beer's implicit support for *"higher-management"* governing meta-systemic functions in his earlier work and his critical, even dismissive, understanding of consensus decision-making as leading to the *"lowest common denominator"* (Beer, 1975, p381). In this sense the universality of cybernetics is a limiting factor. Democratic organisations have a unique range of approaches, problems, principles, and complexities that are not necessarily shared by other complex systems. Can cybernetics be useful in relation to these idiosyncratic organisational issues, or is it best reserved for questions which significantly overlap with more general organisational problems?

The universality of cybernetics contributes to Mark's observation that there are few *"off the shelf"* tools to be applied to the specific challenges CK faces in their work. Models like the VSM and concepts like the LoRV or RoPC cannot simply be applied democratically in a straightforward, obvious sense (at least not by those without a profound *cybernetic intuition*). They need to be researched, thought about and experimented with, tested, and played with. They cannot be used and applied with ease, like a piece of software (Notion or Loomio for example) or group decision-making processes (such as the Sociocratic circles or speaking-in-rounds). Such *"off the shelf"* tools are much more tightly designed to fulfil a specific function in a particular context and can provide more relevant solutions to the organisational issues experienced in the domain of democratic practice specifically.

I have argued that it is valuable to consider the parallels between democratically organised environments and complex systems as such, but consideration should also be given to the limitations of applying a subject concerning invariance to such a specific organisational

context. This leads me to suggest that cybernetics is best rethought within each discipline it is applied to, echoing the sentiment expressed by Jim earlier (see section 4.1.3); the best tools to speak about organisation in general are quite different from those which are most impactful in a democratic context. The remainder of this chapter will consider a more contextually specific interpretation of cybernetics, applied to democratic organisations.

5.3.2 Cybernetics as contextual system design

Contextually specific applications of democratic cybernetics are already a frequent practice among its practitioners and have been implemented in many of the most appraised models I considered during this research, particularly in the form of sociocratic governance. Sociocracy's historical roots in cybernetics have already been discussed, and it is an excellent example of a model designed not to identify an invariance across all systems, but on the contrary, a particular model for governing a specific type of system. While it includes cybernetic invariances in its design, most obviously the notion of feedback and recursion, its various techniques and strategies amount to a highly specific system designed to be implemented in a characteristically democratic context.

This interpretation is more in line with Pickering's understanding of cybernetics as *"ontological theatre"* oriented around the production of cybernetic objects (Pickering, 2010, p17). From this perspective cybernetics is enacted through the contextualisation of its principles in concrete systems, which test the ideas upon which they are designed in real-world complex environments, opening new avenues of experimentation and elaboration. Sociocracy is perhaps the strongest example of a system rooted in cybernetics which is directed so clearly to the situated context of participatory and democratic organisation. Organisations such as CK, Suma and Cloughjordan, who practise sociocracy as a system of self-governance, perform its practices and experiment with its suggestions. They take and leave different aspects of the system depending on their needs in the contexts in which they find themselves. Mark described

the process of developing and adjusting their Sociocratic practices to suit their needs, a process that sociocracy directly encourages and facilitates:

> "*The value of the evaluation moment of the sociocratic meeting structure is* [that] *it really allows you to actually assess whether these things are working or not. And we do that very regularly, we're very regular like, "that bit didn't work". And that, to be honest with you, is incredible because rarely do people bother saying out loud "that thing that we've been doing this meeting doesn't work" and everyone is like, "yeah, it doesn't, should we just get rid of it?""* (Mark, interview 1)

Furthermore, sociocracy is applicable to a wide variety of organisations who are oriented around democratic and participatory principles. A community and ecovillage like Cloughjordan, or a small political tech cooperative like CK are dissimilar from one another in countless ways, but both successfully use sociocracy as an approach to governance. The diverse goals, needs and priorities of CK, Cloughjordan and Suma give a taste of the adaptability of sociocracy despite its contextual specificity. This implies that situating a cybernetically designed model in a democratic context need not constrain the model's usefulness to only a limited range of organisations with those characteristics. Sociocracy is both focused on the specific context of democratic and participatory organisation but, simultaneously, is applicable to a variety of such organisations.

Beer's Team Syntegrity (TS) approach is a stranger example of a system proposing not an abstract diagram of all highly complex systems (as the VSM does) but a protocol directed towards the specific context of democratic decision-making. Beer's goal of devising a system which might facilitate *"perfect democracy"* led him to design a governance protocol far more contextually specific than the VSM he had developed over the preceding decades (Beer, 1994, p12). This contextual specification reaches the extreme and tilts into counter-productivity in the case of TS, which can be faulted for being so specific in its requirements (in number of people involved, the number of topics discussed, the time required to do so, etc) that it is

practically unusable by many who might otherwise benefit from the results it claims. Additionally, as was mentioned above, the process also demands extensive expert facilitation from trained practitioners, making it yet more inaccessible to those lacking in resources. Even if the requirements of TS were met, there is the odd problem of the usage rights to TS being somewhat ambiguous, and certain parts of it being held privately by Malik Consultancy, meaning the use of the approach without permission from them is a somewhat legally unclear undertaking (Malik International AG, 2018).[56] While TS is a model directed towards the same domain of democratic systems as sociocracy, it could hardly be more different in the demands it makes on its practitioners to practise it. The constraining conditions which TS demands is something that sociocracy's above mentioned broad applicability effectively avoids.

This suggests that there exists a balancing act to the contextualisation of cybernetics. Insufficient specificity can limit the usefulness of a model in the specific context in which it is applied, but over specification of that context can equally lead to the development of a model which demands such constrained circumstances that its usability is significantly curtailed. The latter case also demonstrates palpably that specification of a model does not always lead to it being easy to use, a priority I strongly emphasised in the previous chapter and will return to in the next one.

To further elaborate the contrasts and tensions between *invariant* and *contextual* cybernetics I will consider their implications for my three core case study organisations. First, I will discuss the paradigmatic contextual structure of PK's OS, then I will briefly analyse CK's design approach, before finally considering how my work at HG led to the suggestion of a model which conveys a complex and intertwined relationship between contextuality and invariance.

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[56] Though Walker indicated that Metaphorum had used the TS process without any problems, he specified that he *"always let them* [Malik] *know"* before doing so (Walker, 2022 email exchange).

5.3.3 Contextual governance in Premium Collective's OS

Premium Collective's Operating System (PK's OS), despite its name, is not explicitly cybernetic or systems based in its design, yet its idiosyncratic characteristics exemplify some aspects of organisational cybernetics effectively and draw emphasis to factors which are of importance to the context of democratic and participatory organisation design. PK have been developing their OS governance approach gradually over many years. Its first iteration was completed in 2009, and Peter began updating the model when he joined PK in 2016. The process of updating the model had ups, downs, and considerable delays in its development; eventually amounting to a system made up of around 50 distinct 'modules' for the governance of the organisation. This process was further complicated by the fact that a second organisation began using parts of the OS in 2007; adding unique components of their own to their incarnation of the model. The OS governance model is highly unique and idiosyncratic. It has been developed policy by policy over time, through open discourse which takes place on PK's online message board, via consensus decision-making. Despite the OS's name having distinctly computational associations Uwe downplayed the importance of computational and software language, saying of Peter's work writing up PK's OS:

> "[Peter] *started* [the OS write-up] *on his own, and he never had any insight into the actual work we do, plus he has an IT-perspective while most of our work is human-centred"* (Lübbermann, email exchange)

The OS was developed both as a way for members of the collective to have a clear and complete perspective on PK's organisational practices as well as a means of sharing their techniques as a collective to other organisations with similar values and aspirations. The modularity of the PK OS allows organisations to select those components which most closely align with their own needs and circumstances.[57] What stands out in the OS system is the

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[57] More examples of OS modules are provided in a later chapter (see section 7.5.1).

situations out of which many of the OS modules emerged. Policies developed out of situations which PK found itself in (or which one of its working partners found themselves in) and the organisation made changes to respond to similar contexts more effectively in the future, or to avoid similar errors coming up again. In a certain sense this approach to organisational development stands in stark contrast to cybernetics understood as the identification of systemic invariances, in that its strategies and approaches emerged directly out of their organisational experiences as a group and out of contingent contexts which they adapted and readjusted themselves to. This improvisational and adaptive understanding of system development is more in line with conceptions of cybernetics which prioritise emergent and situational adaptation over time.

Furthermore, at least two organisations have now implemented a version of the OS system and have added some of their own additional modules, which might be taken on and used by other organisations as they so choose. PK themselves use forty-two of the fifty components, while *Auguste Burgers & Soulfood* used only twenty of them. PK's OS provides a set of modules for the governance of a participatory organisation and encourages its users to take and leave aspects of it as they see fit. It can be understood as a toolbox of components which are useful not because of inherent attributes of the organisation in question, but because of their specific organisational context in conjunction with the ethical and organisational principles they are committed to. This situated approach to systems design stands in stark contrast to the invariant character of some cybernetic models and concepts and might indicate a more appropriate means of applying those principles to democratic organisations.

This puts PK's OS in stark contrast to an invariant model like the VSM. The former is highly contextually specific and emerged out of a particular organisational context, informed by PK's organisational and ethical philosophy, and is designed to be adjusted to different organisational contexts as its practitioners see fit. The latter is a model which can be used in relation to any

extraordinarily complex system but is ordinarily used as a diagnostic tool within human organisations (not specifically democratically ones). The application of the VSM at Suma and Cloughjordan contrasts with PK's development of their OS and show two dissimilar ways of designing and applying an organisational model. I consider these two models to be at two ends of an organisational spectrum from invariant generality (in the VSM) to variable contextuality (in PK's OS and sociocracy).

Whether one of these approaches is preferable to the other is dependent on the problem to which a model is directed.[58] Despite the appropriateness of each of these models in their own situations, I have shown evidence throughout this research to suggest that more contextually specific models are beneficial to participants' capacities to understand those models and their relevance to their work. On the other hand, I argued above (see section 5.3.2) that more contextual specificity makes it more complex to ascertain how pedagogues might provide effective lessons for a variety of organisations to take on and embody a model's general implications.

PK's OS stands out uniquely among the organisational models I have so far considered here. Like sociocracy, it is a model which can be taken and applied within other organisations as they see fit due to its modular structure. On the other hand, it was not developed by researchers or theorists but by a collective of practitioners designing solutions to the problems they came up against as a group, as well as their critical analysis of their own practices and the dominant managerial conventions (which they call the *"abnormal economy"* (see section 6.4.1)) they

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[58] Walker and his colleagues' application of the VSM to Suma emerged out of a specific context in which a model for better diagnosing organisational vulnerabilities was needed. PK's OS emerged out of Lübbermann and his fellow collectivists responding to a situation in which they felt new tools needed to be devised to resolve the problems they had identified (which they categorise under the four headings of social, environmental, financial, and organisational). The OS was not introduced as a way of resolving problems within an existing organisation but rather as a way of delineating solutions they had found to challenges that emerged from their experiences as a collective, and which sought to demonstrate a different way of structuring an organisation altogether, more in line with their shared ethical commitments.

sought to distinguish themselves from.[59] In terms of its application to other groups it shares some aspects in common with Sociocracy 3.0, as a governance system made up of modular components which can be selected from by users. On the other hand, it is a system which must be recontextualised and thought anew by those organisations who take it on while also being added to, edited, and adapted by PK themselves over time. In this sense PK's OS is a system continuously in the process of being designed and draws yet more attention to the importance of focusing on situated specificity in the process of democratic system design.

5.3.4 Common Knowledge design process

CK's work focuses on the design of solutions to organisational problems, especially focused on the improvement of technical infrastructure in conjunction with a focus on the way people relate to this technology in practice. CK's approach to design does not focus so much on social or technological factors in isolation, but on the practical overlapping of one with the other in practice. In their first public 'Weeknotes' post CK emphasised five points for campaigners to consider in relation to technological and organisational design issues:

> "*Technology should be an enabler, not a time sink: we see that many campaigners are put off digital technologies because of headaches we try to remedy with the above points.*
>
> *Master the technology you already use: often the only difference between 'techies' and 'non-techies' is how much googling has been done.*
>
> *Learn from parallels in other worlds: you can often steal solutions to administration and organisational problems you face from other campaigns, teams, nonprofits and even small and large businesses.*
>
> *Sometimes organisational problems are tech problems: how does access to information and tools affect how you work as a team? There is usually an alternative.*

---

[59] It should also be emphasised that Uwe's personal contributions to PK's governance approach and OS system has been highly significant and that he could fairly be characterised as primary designer of PK as an organisation. The impact of his influence is outlined in his book *Hacking the Economy* (Lübbermann, 2021). This text will be discussed further in the final findings chapter. Furthermore, his impact on PK and his approach to leadership will be further discussed in that chapter (see section 7.5.2).

> *Sometimes tech problems are organisational problems: more likely though, what is seen as a problem with tech may be about how your organisation or organising is functioning."* (Common-Knowledge, 2020)

My discussions with Jack often returned to the theme of contextual sensitivity and the importance of taking few assumptions into a new job or design process, shaping an understanding of the specific problem at stake before developing a potential means of resolving it:

> *"The way I think of it is that there are two parts. I think CK generally thinks like this. You have the technical bit: you know, where does this happen? Think about the users, think about the people involved in this. Do they use particular tools generally? Do people relate to one another through phones or conversation or through the door or whatever? Where do they do this? There's the architecture as well as the tooling... so all the technical stuff and material stuff.*
> *And then there's the social component of: ok, but what's the dynamic here? What's the orchestration of this stuff happening and how do the social and technical relate? When you get from the who to the how to the social and the technical, and then you look at that from all those different aspects you start to build up a really clear idea of "this is the problematic"... and that's why I would say focus down into the problem and then possibly you might, by moving sideways across different examples, you might start to recognise where there's quite clear patterns between different types of groups because they have the same compositional problem."* (Jack, interview 3)

CK's design process epitomises an approach to design in which the specific context they find themselves in acts as the source of the problem they identify, and the solutions they design in response to that problem. If patterns emerge between varied contexts over time, then more general responses may be incorporated into CK's approach, but the default, for them, is to bring as few assumptions and generalities to their case work as possible, following the material conditions and social dynamics as they emerge. This contextual and situational approach to system design stands in stark contrast to Beer's understanding of cybernetics as being concerned with the identification and invocation of invariances when it comes to designing

systems. Which of these approaches is more appropriate is, I argue, dependent on the nature of the design problem in question. In either case, two strange overlaps emerge from these reflections on context and invariance. First, (1) the application of invariances in systems design must be done carefully and with *sensitivity to the contextual circumstances* to which they are applied; and (2) a sensitivity to contextual circumstances is, counter-intuitively, an *invariant* factor when designing systems; which is to say that contextually situated factors must *always* be considered when developing a cybernetic system, even if the design pertains to apparent systemic invariances.

5.3.5 HyperGroove's design process

The design process at HG over the past two years speak to the themes of invariance and contextuality discussed in this chapter, and to their overlapping interrelation. As was introduced a few chapters ago, our group initially developed around the goal of creating a digital application to facilitate the easy sharing of seeds between different communities. As I discussed and developed this project and began to learn the components which would make it up, some of our discussions became focused on the more general problem of facilitating self-organisation itself. Our consideration of the seed-sharing problem began to overlap with the organisational themes we were discussing and the cybernetic vocabulary we were beginning to develop as a group. The specific context of seed-sharing became an example of a far more general problem we identified in our own struggle to learn how to organise ourselves autonomously and democratically as a group, while providing technologies which might help others do the same. The members of the group who shared an interest in this broader category of problems (myself, Jim, and Lauren) began to design an application which would help democratic groups to organise. I, informed by what I was learning during my research project, emphasised the problem of decision-making as a key context in which accessible and easy to use tools were lacking, while Jim emphasised the importance of integrating together a wider

range of tools which would act as a kind of digital basecamp or 'hub' for democratic organisations. The working title for this second project was *The Hive* and was imagined as an integrated tool which would be made up of a set of components designed to facilitate smoother democratic decision-making. This ambitious idea would demand significant funding to become a reality; funding which we did not have.

There were two apparent paths to take regarding the development of the tool. The first was to attempt to develop an integrated tool with a range of components to assist in democratic organising, making it more refined as we developed it: an approach which Jim emphasised the benefits of. The second, which I supported, began from a simpler and more focused tool for democratic decision-making which we would develop and refine before adding additional components as and when they were ready and financially viable.[60] Initially we attempted the more integrated, ambitious plan of action, despite concerns about its attainability, partly because of Jim's strong support for this approach. Later, due mostly to our extremely limited resources, we backed away from this approach and focused on a more specific, decision-making component of Hive. Specifically, we began to develop a matrix-grid tool to help groups to visualise their impressions or priorities around a specific subject. The tool was not designed to make decisions for groups, but to help them visualise their members viewpoints in helpful ways, so that decisions could more easily be made and the alignment, or lack thereof, regarding a proposal could be seen visually by everyone in the organisation. The idea for this tool, less ambitious than many of the other potential ideas we had discussed, was settled on partly as a result of our mutual interest in the idea, partly out of our very limited resources

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[60] These two approaches might be summarised as follows: the first proposed to move from 'whole to parts'. We would begin by designing a kind of 'hub' which would be made up of several basic but functional component parts. Over time we would refine each of these components and expand the 'hub'. The second began with only one 'part', a small, more modest but more refined tool which would later become part of a 'hub' once multiple components were completed to a high enough standard. The former moved from 'whole to parts' while the latter moved from 'parts to whole'.

leading us to a simple idea, and partly out of Lauren's technical skills allowing us to produce a prototype of this idea relatively quickly.

This summary of the design process at HG shows a back-and-forth between dealing with a more contextually specific problem (sharing seeds on SeedShare) and more general problems held in common by a diverse range of organisers (general self-organisation and remote decision-making with digital tools, etc). The transition from SeedShare to Hive moved from a highly specialised tool to a much more general problem of self-organisation as such. The attempt to design this as an integrated 'whole' tool from the outset was an (arguably overly ambitious) attempt to make a generally applicable tool for organising. The final move to a decision-making matrix, to support groups in visualising decision-making and their alignment (or lack thereof) as a group, was a more specific problem within the general domain of self-organisation. This shows a back-and-forth process, moving from contextuality to invariance and back again, taking place throughout our design process.

Devising the above discussed tool together was our explicit focus as a group, but these discussions as well as the impetus for the Hive project had emerged out of our own organisational experience and the challenges we had come across as a group. The question of how we should organise ourselves, what models, skills, tools, and practices we should take from others or develop for ourselves, was a key discussion subject for the group. The difficulty we had in learning how to approach our own organisational strategy was the impetus behind the development of the Hive project altogether. During our initial discussions we took some influence from the research I was doing which overlapped with my thesis project and our work as a collective. I had investigated decision-making processes in democratic groups, and the three of us had a keen interest in systems design and other overlapping subjects. While discussing the governance and decision-making practices we could take on as a group, Jim had emphasised (1) agile managerial approaches and had a strong focus on worker autonomy

(introducing the idea of each of us having independent 'domains' of responsibility around which we would have significant autonomy, or a 'mandate' to make decisions). I had emphasised the (2) use of consensus-based decision-making[61] to find agreements on decisions which impacted the whole organisation. All three of us emphasised (3) the importance of open and transparent communication and openly accessible information for the whole group. This set of three overlapping themes in our group's organisational approach left me wondering how to integrate these into a visually helpful representation of our approach to organising and self-governance, and I eventually produced a simple diagram which would summarise our organisational structure for our own reference (**FIG 1**).

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[61] Like PK, our approach had elements of both consent and consensus approaches, and we discussed the distinctions between the two at length. We used the terms somewhat interchangeably but tended to refer to the process as being consensus-based.
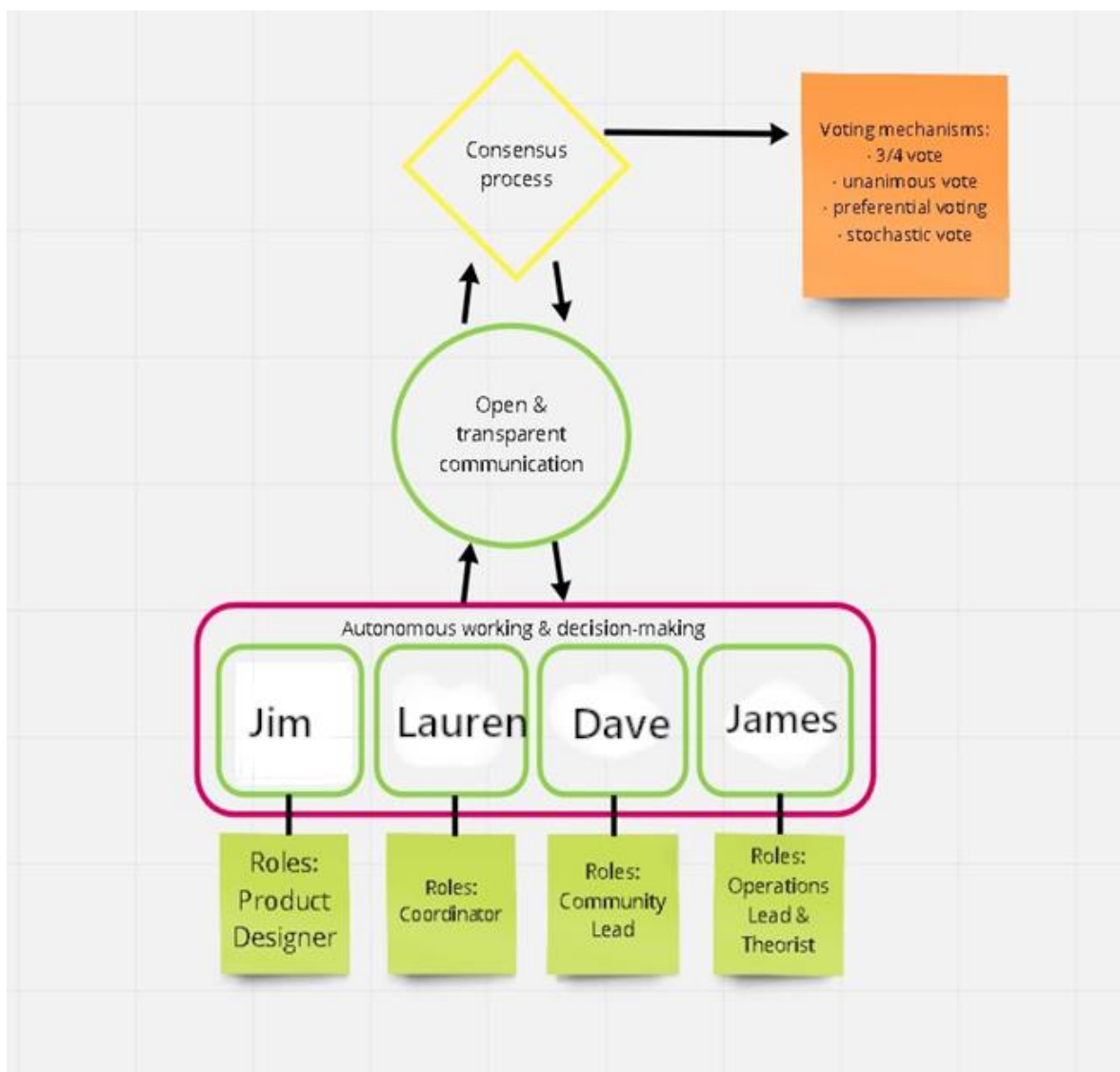
Figure 1: visual representation of HG's decision-making structure[62]

At the bottom would be our personal 'mandates' as a group, over which we would have personal autonomy and independence, allowing us to take charge of our own domain and develop our work without explicit oversight from our colleagues. Any task which primarily

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[62] It should be noted that the diagram displayed also shows an additional set of voting mechanisms to the right of the consensus protocol, in orange. These were discussed as alternative means of making decisions if we were unable to reach consensus as a group. For example, if an expedited decision needed to be made quickly.

In some ways these 'extenuating circumstances' are reflective of PK's own protocols for such special circumstances in which Uwe has authority to make emergency decisions (for example, Lübbermann would be able to recall a shipment of Cola if they had been produced with double the intended quantity of caffeine, about which Michael joked: *"that would be awesome but it's illegal"*). We did not use these alternative voting mechanisms and it is possible that these options being 'on the table' might complicate decision-making by taking emphasis away from compromise and deliberation. Furthermore, the conditions of introducing these alternative voting mechanisms were not very tightly defined.

impacted the area over which one of us had a 'mandate' we were free to undertake autonomously, while decisions which would affect the group or organisation *as a whole* should be decided by consensus. The consensus process had the possibility of invoking a veto, but we retained a strong emphasis on the social cost that this might have on the group's trust and cohesion.[63] Vitally, between these two domains of autonomy and cohesion (consensus) was the domain of transparent discussion and information sharing. This communicative openness was understood to be essential to the functioning of the organisation, as a bridge between our autonomous domains of responsibility and our collective decision-making process. This transparent discussion space was the communicative space which allowed the group to collectively determine the boundaries between both our individual autonomy and our collective consensus process. The limits of both our individual autonomous work and the power of the collective were determined by our open and transparent discussions, which mostly took place during our regular Zoom discussions and interaction of our Discord forum.

On the one hand the development of this organisational structure emerged out of our specific interests as a group and developed into a unique and one-of-a-kind organisational diagram which seemed to fit with our interests, priorities and needs. On the other hand, the diagram has an open and general form and could be mapped onto a wide variety of democratic organisations. This diagram is indicative of the complex and messy relationship between contextuality and universality. It emerged out of our preferences and requirements but can be easily projected onto other organisations as a quite generic or invariant model. Surely every democratic organisation allows for members to have a degree of autonomy over their work, while also limiting autonomy as far as it is needed for collective agreements to be made. Surely an open space in which discussion takes place is needed for any democratic organisation to determine

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[63] This reflected PK's own implementation of the veto system, who also emphasise the social cost of using a veto. During our time working together a veto was never used.

when an individual's responsibilities end and collective decision-making begins. On the other hand, the model was produced improvisationally and was not designed with the intent of being presented in my thesis. It was a solution to a particular problem we were discussing (how to visualise and understand our internal organisational approach) and yet the specific context it emerged from ended up producing a quite general model of democratic decision-making. This emphasises the complexity and messiness which emerges out of a consideration of the relationship between generality and contextuality. A problem that begins as a seemingly specific problem may end up producing responses which map on to other systems in unexpected ways, while broad and general questions end up being responded to with solutions that were found in much more contextually specific circumstances. There is an interrelated and messy relationship between invariant and situational systems, and a cognizance of the relationship between one and the other is essential when conceptualising the design and development of cybernetic tools for democratic contexts in particular.

5.3.6 Key contributions from contextuality-universality distinction

The latter half of this chapter has discussed a second key tension which was revealed by this research project. This distinction has produced several key contributions for my findings and has important implications for thinking about how to teach and implement cybernetic and systems models within participatory organisations. Centrally, I showed that while the invariance of cybernetic models can reveal shared structures beneath all forms of organisation, democratic contexts come with their own contextually specific issues which need to be addressed on their own terms. Consequently, future democratic cybernetic models would benefit from being tightly designed around the contextually specific issues faced by democratic organisations, while remaining cognisant of the shared meta-systemic commonalities between them. The final portion of this section emphasised the overlaps between invariance and contextuality, showing that while situational specificity is vital for

good organisational design, the influence of invariant cybernetic structures provide a shared framework with which to understand seemingly one-off organisational issues. It is in this context that invariant models like the VSM are most powerful, providing a comprehensive diagnostic and analytic framework to elucidate the underlying commonalities between complex organisational pathologies.

5.4 Summary

During this chapter I have discussed two sets of tensions which emerged from this investigation. These themes emerged throughout my research and are proposed as oppositions to be reflected on by researchers, systems designers and practitioners during the process of elaborating the relationship between democratic organising and cybernetics.[64] In both cases, one side of the tension has been emphasised over the other to some degree: a *democratic pedagogy* of cybernetics and a *contextually embedded* systems design approach have both been presented as requiring greater emphasis within attempts to conceive of democratic cybernetics. This is not because *cybernetic intuition* or the identification of *invariances* are undesirable (although a more antagonistic relationship with the former will be developed by the end of this research (see section 8.2.2)) but because the former two have tended to be underemphasised and require greater attention in democratic-cybernetic academic and practical work.

The first half of this chapter began to describe techniques for thinking around this deep tension within cybernetic pedagogy, but a more developed approach to its amelioration, which amounts to a new way of translating and renaming cybernetics, will be discussed in the next chapter as *low cybernetics*. The latter half of this chapter discussed the tension between contextual and invariant models in cybernetics. I considered the relationship between these two conceptions of cybernetics and considered their contrasting implications for a democratic practice of cybernetics. I have shown that the line between contextuality and invariance can often be blurred during the process of articulating an organisational diagram, as I did during my work with HG. I also showed that organisational models can be understood as being placed

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[64] I have already argued that the process of *easing* cybernetic models is important because of the divide between those who latch on to cybernetics vocabulary with ease and the others who struggle to develop fluency in its technical lexicon. The tension between these two groups; those with *cybernetic intuition* and those who lack it, suggests the need for a more participatory language of cybernetics to be developed; a language which makes the *democratic pedagogy* of it (which is to say its self-teaching) possible.

somewhere on a spectrum between invariance and contextuality, epitomised by the opposing cases of the VSM and PK's OS. Both contextuality and invariance have been appraised as appropriate within different contexts, though I have tended to emphasise the former over the latter as needing greater attention and emphasis.[65]

5.4.1 Key contributions from this chapter

The two major tensions which emerged from this chapter provide important considerations for those designing or participating in the governance of democratic cybernetic organisations. I showed a variety of techniques for conveying cybernetic models and concepts pedagogically, which will be returned to and developed in the next chapter. These examples show ways that cybernetics can be taught to democratic practitioners, whereas the next chapter will turn towards the question of how practitioners can attempt to implement the ideas autonomously. I also discussed the contextually embedded issues which were dealt with by three of my case study organisations, and the overlaps between their contextually specific issues and the invariance of models like the VSM. Both oppositions discussed in this chapter reveal tensions in the implementation of democratic cybernetics and help to situate the need for *low cybernetics* which will be proposed as a means by which the challenges discussed in Chapters 4 and 5 can be ameliorated.

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[65] On the one hand, a sensitivity to the invariant factors which impact organisations in general provides insight into the ways democratic organisations are impacted by influences so general as to boarder on 'laws of nature'. These invariances impart lessons upon organisers and their deeper consideration is likely to produce valuable insights into democratically organised contexts. Having said this, reflecting on these varied models leads me to suggest that cybernetics might be more usefully applied to democratic organisations by focusing more closely on their contextually specific and situational considerations; an approach to systems design epitomised in this research by PK's OS.

Chapter 6 (Findings 3): Low cybernetics, reformulation and heuristic language

"But if we acknowledge that tech on its own can't save us, then we need to be attendant also to experiments in 'social' technology. Horizontalism, for example, as practised in Occupy Wall Street and elsewhere, is also a technology. Whether it's a techno-utopia one is embarked upon, or a new social practice, one has to pay attention to how the social inhabits the former and the technical permeates the latter. Tech and the social (or the political) are not separate things. The phrase "the technological is politically (or socially) constructed" is meaningless. One is simply looking at the same systems through different lenses when one speaks of the political or the technical." (Wark, 2013, p14)

"Disciplines qualify and disqualify, legitimate and delegitimate, reward and punish; most important, they statically reproduce themselves and inhibit dissent… In place of the "all-encompassing and global theories" that the university encourages, Foucault exhorts his students to think about and turn to "subjugated knowledges," namely those forms of knowledge production that have been "buried or masked in functional coherences or formal systematizations". These forms of knowledge have not simply been lost or forgotten; they have been disqualified, rendered nonsensical or nonconceptual or "insufficiently elaborated." Foucault calls them "naive knowledges, hierarchically inferior knowledges, knowledges that are below the required level of erudition or scientificity" (7)—this is what we mean by **knowledge from below**.*"* (Halberstam, 2011, p10-11)

6.1 Introduction

This chapter begins by recounting a previous incarnation of this chapter, in which I turned towards articulating the findings in technical cybernetic terms, and my subsequent realisation that a better articulation of the chapter could be found in a more down to earth, common sense framing of the findings. This resulted in returning my investigation to earlier themes of heuristics and low theory, which better characterise the kinds of communication at work in participatory democratic organisations. I assess the turns of phrase, shorthands and rules of thumb which emerged from my investigation of two of my case studies (PK and CK), leading me to convey these concise forms of communication as a *heuristic* approach, characteristic of democratic discourse. This form of communicating is indicative of a more appropriate way of understanding how cybernetics can be effectively *reformulated* into language more at ease in democratic spaces, where technical jargon and rigorously defined concepts are less easily discussed than *ad hoc* and imprecise shorthands, about which entire groups can intuit (and act upon) the meaning with little outside training or pedagogic guidance.

This mode of heuristic cybernetic translation I refer to as *low cybernetics* and I point to several cases in my research where the obstructive vocabulary of cybernetics has been dodged in favour of a more direct invocation of its lessons. In doing so, an awareness of the outcomes of one's use of cybernetic language is paramount, emphasised by several instances where the introduction of cybernetic vocabulary seemed to get in the way of - rather than improve - smooth and effective communication within democratic groups. If *"the purpose of a system is what it does"* then the purpose of introducing technical cybernetic vocabulary into democratic organisations seems as likely to obstruct effective communication than make it smoother, under some circumstances (Beer, 2002). I end the chapter by suggesting a set of four heuristics to guide the development of 'low' forms of cybernetic explanation. The use of technical and scientific cybernetic vocabulary within democratic contexts has shown a tendency to lead to

the gap between cybernetically informed priesthoods and fatigued participants forming and becoming wider. This leads me to argue that the lessons of cybernetics, to be effectively translated into a democratic tongue, must take on a different tone; less scientific and rigorous, but equally informed by a cybernetic disposition.

6.2 Finding my way to this chapter.

The findings I discuss here emerged from an alternative version of this chapter which I sunk several months of writing into but eventually decided to rewrite (almost) from scratch. The chapter was centred around the development of a technical argument (via the application of Beerian variety engineering) to justify the *easing* of cybernetic models through their simplification and contextualisation (or variety attenuation and amplification respectively). While the argument may have been an accurate application of the LoRV and of some interest to cybernetic pedagogues, I had reflected less on what I was really *doing* by making these claims. What became clear after further reflection and discussions with my peers was that I had diverted away from my own methodology in order to make a specialised argument directed towards experts.[66] Through a process of autoethnographic reflection I came to see that the approach to articulating my findings I had taken was neither in-keeping with my low theoretic methodology, nor was it the most appropriate way of articulating the point I was making towards a general audience. [67] Moreover, articulating the argument in easily understandable

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[66] The reframing of my argument emerged through the feedback I received from various sources. First, during discussions with my supervisors they pointed towards other threads of my research which I had left aside in favour of making a more rigorous argument. They drew attention to the tension in my project between two forms of language I was making use of: on the one hand, the scientific language of the technician and scientist, and on the other the contestability of political language more ordinarily used by democratic organisers: what I called *participative clarity*. This led me to get in touch with Walker to ask that he give his thoughts on the core point I had made. While he agreed that the analysis was correct on a technical level, he emphasised the important question *"what have we gained?"* by making the argument in this way (Walker, interview 9). He spoke about his attitude to teaching cybernetics, which, in-keeping with the pedagogic techniques described in the last chapter, took a different approach to the one I had taken during my discussion of variety engineering. He emphasised a process of "*nudging*" those with an inclination towards cybernetics in the direction of a systems viewpoint and argued that such conversations always return to a discussion of the *"patterns of relationships"* at work in any system: whether the relations in question are ecological, machinic, or in the case of democracies, human relationships (Walker, interview 9).

[67] This might be related back to the metaphor of the steersman and the ship introduced at the outset of my methodology chapter (Chapter 3). The rerouting of this chapter, putting the ship back on course after its captain got carried away, required openly listening to and responding to the crew and passengers (my participants and peers); drawing on their knowledge to regain a cognizance of the heuristic of travel, rather than following the tangential pontifications of the captain. Drawing on the intelligence of the entire crew is something which will be exemplified again in the next chapter during my discussion of PK's response to the pandemic.

terms amounted to a demonstration of the approach I was advocating, whereas my technical articulation of the chapter had in some sense inadvertently undermined it.

I would be better off, I realised, stating directly what I had tried to prove with technical vocabulary: we should convey models *easily* and allow the language for doing so to emerge from the *context* at hand. These are essential considerations when discussing cybernetics and systems in democratic terms, and my technical detour from clearly stating this point taught me an important lesson in the tempting allure of scientific exactitude when common-sense language is more appropriate.

6.3 Reformulation in easy terms

6.3.1 Reformulating cybernetic models

Earlier, I argued that cybernetic models should be expressed in ways which are rendered 'easier', both in terms of understanding and operability, for practitioners in democratically governed groups. The *easing* of cybernetic models refers to their expression in terms which are less technically dense and are therefore easier for a larger group to understand, discuss and implement. Without a process of translative easing, those with the greatest investment in cybernetic vocabulary will be led to interpret it for - and communicate it to - the rest of the group, or exclude them from participation in the language of governance altogether (even if inadvertently). This was associated with the development of *knowledge priesthoods* and what was called *VSM fatigue* by members of Cloughjordan, leading to the thoroughgoing rejection of cybernetics vocabulary by some. The widening gap between those who embraced cybernetic vocabulary and those who did not was indicative of a breakdown in communication within the organisation. This communicative breakdown can be contrasted to what Brown calls the use of *easy* language in organisational facilitation, and I argued that a process of easing is vital for cybernetics to be more readily integrated into the practices and shared vocabulary of democratic organisations. This easing process involves a trade-off between using more accessible and uncomplicated language while making efforts to avoid losing the core pattern which underlies the model and gives it operative usefulness. Sociocracy can be understood as a partially successful example of this easing of cybernetics in action.[68][69]

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68 We emphasise the only *partial* success of sociocracy since it still retains some of the inaccessibility and complexity of cybernetics, as Phillips argued earlier (discussed during section 4.3).

[69] While training and consultation tends to be an important part of learning the sociocratic method, it is also possible for groups to teach the model to themselves and implement whichever portions of it seem most appropriate to their needs (as is demonstrated by CK's self-pedagogy of the model and supported by the range of accessible resources regarding the subject) (Rau, 2018; Buck, 2012; Bockelbrink, 2021). While Walker and his colleague's application of the VSM to Suma is an interesting example of the same self-pedagogy being done with the VSM,

The easing of cybernetics not only has to do with limiting the technical complexity with which the subject is conveyed, however, it also has to do with the conveyance of cybernetics with the use of metaphor, imagery and language which is *contextually* appropriate to the group in question. Contextuality may be taken in a variety of ways here: it might refer to the situation an organisation finds itself within, reoccurring issues or vulnerabilities they identify, or broader organisational contexts like the sector, region, or governance structure they use. Whatever the case, the communication of cybernetics should be channelled through the specific situated contexts which organisations occupy, otherwise it risks remaining at a level of abstractness and generality which participants may find to be impertinent and irrelevant to their situations.

The concept of *reformulation* which I sought to defend in the initial manifestation of this chapter came down to a technical reading of the relationship between these two key concepts. On the one hand, cybernetics needed to be rendered *easier*, which is to say less technically complex and couched in inaccessible language, for it to be understandable and useful to democratic groups. On the other hand, it needed to become more *contextually grounded* in the organisational situation at hand, drawing on the experiences, practices, and principles at work in the organisation so that cybernetics' relevance and appropriateness could become obvious and actionable. These two concepts of easing and contextualisation map convincingly onto the two key means by which variety engineering takes place (variety attenuation and amplification respectively).

6.3.2 Reformulation as variety engineering

Easing has to do with the removal of complexity from the model or context in question, whereas contextualisation is concerned with the addition of new (contextually specific) information so that the relevance of models like the VSM can be made clear to the group. This

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it should be emphasised that this case is quite unique and led to Walker later becoming one of the foremost experts on the application of the VSM to democratically governed organisations.

I originally articulated in terms of variety engineering, and it was here that my argumentation took a misplaced turn, choosing to convey *reformulation* in technical, scientific language rather than the common, easy language my thesis advocated. *Reformulation* was proposed as a way of understanding how one might re-articulate cybernetic models in more easily understandable and usable language, in such a way that it could be responsive to the situated needs and requirements of the specific group in question. Specifically, *easing* was identified with a process of variety attenuation, in which the environment the agent wants to gain RV with is rendered less complex (the 'environment' in this case being the cybernetic canon and the 'agent' being the democratic community). On the other hand, *contextualisation* was identified with variety amplification, in which the agent amplifies the variety of their model of the environment so that they can gain a more complete understanding of it (which is to say, adding complexity to the model by contextually connecting it to their circumstances in particular).

As a consequence of what I learned about democratic communication during my research, however, I realised that a more appropriate framing of this variety engineering concept would involve articulating it in less inaccessible engineering language.[70] Rather than articulating reformulation in a technical voice, which added complexity to the argument and demanded a technical ear for it to be comprehensible, it was more appropriate to instead tend in the opposite direction; to move away from the dense technical arguments and seek to condense the thought into more concise and eased language. A better articulation of this argument would take the

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[70] To refer to the distinction I had made in my first findings chapter (see section 4.3) my use of variety engineering had sought to justify the need for *participatory clarity* in cybernetics by invoking dense cybernetic vocabulary, whereas I should have instead been producing the kind of clarity I advocated by avoiding the reproduction of such inaccessible cybernetic parlance.

form of a simple phrase, a more *heuristic* articulation of reformulation which makes it easier

to be understood by a general audience.[71]

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[71] This shift in approach was perhaps the most important shift that took place during my project and brought the central concept of this chapter into sharp focus. Moreover, reformulation as variety engineering remains a valid way of conveying the concept of *low cybernetics* to certain audiences. Specifically, those who are accustomed to the kind of rigorous cybernetic language which has been traditionally dominant within the discourse.

6.4 Heuristics as a technique of easy and contextual communication

What had changed during my transition from reformulation as variety engineering to reformulation as low cybernetics was not the substantive argument at hand, but merely its framing; the language in which it was dressed. There may be various approaches to articulating language in such an easy and contextual way, but the one that stands out as most characteristic of such approaches in my research is the *heuristic*, something which had appeared throughout my study in the organisations I considered as well as the theoretical works I had analysed. Heuristics provided a clearer way to conceptualise the kind of communication I was getting at with my theory of reformulation; helping it to regain a clarity which my tangential exploration of variety engineering had led me to lose sight of.

Throughout my research linguistic short-cuts had appeared from all the established organisations whose communications I had investigated. Shorthand phrases were commonly used in both CK and PK especially and were introduced within the sociocratic method to concisely convey its core practices and principles. These reference points made for efficient and easily understandable communication within democratic organisations and often emerged out of the contexts they found themselves in, developing out of recurrent situations and vulnerabilities they had detected, or lessons they had learned.

6.4.1 Heuristics in Premium Collective

Several guiding heuristics emerged from my investigation of PK's forum, where I saw the same phrases used repeatedly, playing a role in the organisation's ability to understand each other with ease. They used shorthand phrases to quickly articulate commonly reoccurring reference points concisely and comprehensibly. These rules of thumb referred to tendencies, issues, principles, and ways of characterising the organisation. I will mention a few of the phrases that reappeared frequently and around which important discussions orbited.

- *"The conversation had fallen asleep":* Tony and Uwe referred to discussions as having 'fallen asleep', referring to lack of activity on the forum regarding issues which had been identified as being in need of attention. The phrase denoted a lack of engagement with important topics, something which reflected the difficulties some collectivists had in keeping up to date with the forum, both because of its rudimentary interface and the demanding task of reading the forum's sometimes extensive and time-consuming discussions.

- *"Onion layers"*: were a way of characterising the organisation of the collective used by Uwe on several occasions, describing the collective in terms of a seven-layer onion, with the organisation's structure and principles sitting at its core, and the other layers being made up of various relationships with other persons and entities. While the metaphor was only actively used by Lübbermann as far as I saw, it provided a strong visual metaphor with which to represent the collective. Uwe described the onion thusly:

  "One can perhaps see it as the saying about the onion: the core is Premium, i.e. the living proof that with these values one can run not only a functioning but a better functioning business (in showing this, by the way, it is in my view helpful that we don't make any organic-fairtrade-local-product, but one that typically counts as the no.1 capitalism product, as it were: a cola). The next onion layer is all of you, the collective, with which information is regularly exchanged and through this we come to an intellectual development together. The next onion-layer is the commercial partners with whom we work [...] The fourth onion layer are the students, whom we have accompanied through over 150 scientific works [...] The fifth onion layer are the members and participants at the talks and workshops, often at universities, but also at other businesses [...] The sixth onion layer are the advisors for other groups and organisations of various types and sizes [...] And the seventh onion layer is then the concrete transferal into other sectors" (Lübbermann, Premium Collective forum, *Realignment Premium*)

- *"Two-class collective"*: this was a way of describing a deep issue within the collective in which a perceived power divide was developing between the orga-team and the rest of the collective. The orga-team are a small group of permanent members of the collective who deal with some of the administrative organisational work. Some members of the collective, including Uwe, Michael, and several others, have had growing concerns that the group are gaining a kind of managerial, unaccountable power within the collective. Lübbermann initially introduced the phrase "two-class collective' to characterise the issue. The term situated a long running discussion on the forum, leading to Michael suggesting an alternative 'working groups' model, reminiscent of the "*autonomous self-organising little groups*" described by Walker while at Suma (see section 4.4.3). The phrase was also taken up by a member of the orga-team to argue that the two-class system was beneficial and should be protected, sparking an impassioned response from Uwe and others to the contrary, based on the collective's core commitment to equality.

- *"Blackbox PK"*: this phrase emerged during various discussions from members like Peter, Uwe, and Lisa, and was referred to as a problem in need of suitable resolution from the collective over the course of several discussions. Like the *"two-class collective"*, the black box refers to some aspects of PK's work remaining invisible to the collective, particularly tasks taken on by the orga-team, leading to a lack of accountability, transparency, and effective information exchange.[72]

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72 When I discussed with Walker PK's use of the term 'Blackbox' to describe the inaccessibility of some parts of their organisation he seemed somewhat confused by their usage of the term, since it diverted from its more rigorously defined use within cybernetics and systems thinking. This is indicative of the fact that among the heuristics listed here which relate to cybernetic concepts, they do so imprecisely and figuratively, often ignoring the precise technical roots from which the terms emerged. Nevertheless, this imprecise application of cybernetic terminology appears not to be obstructive to its effective use as a heuristic.

- *"Abnormal economy"*: mentioned by Lübbermann on the board on several occasions, as well as on PK's website describing the work they do, the 'abnormal' economy and business practices are what are conventionally thought of as the 'normal' way of running things, through managerial control, tightly regulated hierarchies and profit seeking business. By characterising the status quo as abnormal, PK seek to show how things might be organised differently, producing what Uwe refers to as *"living proof"* that a better way of working is possible, as was quoted above.

6.4.2 Heuristics in Common Knowledge

The heuristics being utilised at CK took a somewhat different form from PK's. Rather than referring to recurrent problems, principles, and ways of characterising the organisation which had emerged over time, CK's heuristics more often took the form of guiding principles to orient their work. This expression of heuristics perhaps emerged less directly from practical experiences but are more closely aligned with the cybernetic understanding of the term as *"a set of instructions for searching out an unknown goal by exploration, which continuously or repeatedly evaluates progress according to some known criteria"* (Beer, 1995). The most commonly occurring heuristic I heard used by CK is characteristic of sociocratic governance: *"good enough for now, safe enough to try"*, a phrase which was also repeated by Phillips during my discussion with him, as well as across much of the sociocratic literature I considered. I also found a set of varied heuristics in a less likely place, however, while investigating CK's digital Playbook (which summarises their techniques of governing together) described by the group as *"phrases we work by"* (Common Knowledge, Notion Playbook). The Playbook describes their use of these shared phrases:

> *"These are phrases or little bits and pieces of culture we've developed over the time we've worked together. This is not intended to be exhaustive but as a guide to some of*

the strange things we may occasionally say. We're always happy to rephrase (or explain) what we're trying to say." (Common Knowledge, Notion Playbook)

Some of these heuristics had come up during my discussions with CK's members, while others were new to me. A selection of the heuristics used by CK included:

- *"Good enough for now, safe enough to try"*: discussed above and elsewhere in relation to sociocratic governance (see section 2.4.7).

- *"Milieu" (or ecosystem)"*: the Playbook says *"specifically from Common Knowledge it means the peers globally that are working on similar issues and have similar politics. In the UK this might mean people like Autonomy, Common Wealth, ourSociety, Newspeak House etc."*

- *"Hit by a bus"*: described within the Playbook as *"a measurement of the risk resulting from information and capabilities not being shared among team members, derived from the phrase "in case they get hit by a bus." It is also known as the bread truck scenario, bus problem, beer truck scenario, lottery factor, truck factor, bus/truck number, or lorry factor."* (Common Knowledge, Notion Playbook)

- *"Hive Mind"*: is what it looks like when "*hit by a bus*" communication is done well. The rhythm of communication means that information easily resonates around the group, about which the Playbook says: *"Collaborators frequently talk to one of us and then speak to another person and voice their surprise at how the other was up to speed already."*

- Several other phrases are listed within the Playbook, some of which include explanatory paragraphs like the ones quoted above, while others do not. These include: *"shared understanding"*, "*phones in the fridge"*, *"turn the wheel"*, *"dogfooding the process"*, *"no hand-waving"*, and others (Common Knowledge, Notion Playbook).

Some of the organisational heuristics are used commonly by other coops and tech start-ups, while others have been developed by CK internally over time as their shared language has taken form. In contrast, PK's use of recurring shorthands and phrases are more embedded within the organisational practices they use and communicate repeated tendencies, common threads, threats, and so on, in easily understood shorthands. While the uses of these 'rules of thumb' differs, I use the term heuristic in this context to roughly describe the kind of shorthand statements, brief and concise turns of phrase, which are used to communicate easily within the group (and sometimes outside the group as was alluded to by CK) and which emerge out of the groups shared practices and strategies of communication with one another.

6.5 Heuristic language – leading to low theory

The above discussed examples of organisational heuristics show how democratic language often takes the form of concise and brief phrases, practical rules of thumb to guide action, and shared language which an organisation can use to understand itself, its principles, its reoccurring problems and vulnerabilities, and so on. These heuristic ways of using language are a clear expression of the *participatory clarity* which I identified in chapter 4 as characteristic of democratic communication. These examples show a tendency within democratic groups to use compacted forms of language to communicate and effectively self-govern. It seems reasonable then, that an expression of democratic cybernetics (and the above discussed notion of reformulation) would similarly reflect this compact and concise way of speaking. What I will call *heuristic* forms of language are not only easily understood but are operationalised by the organisation's members, whether as a way of developing a shared characterisation of some aspect of the organisation (as was often the case in PK's use of them) or as a means of guiding organisational practice (as was the case in many of CK's heuristics). In either case, heuristics are used as a method of guiding democratic communication and practice in ways which are both easily understood and contextually embedded.

This leads me to suggest that the application of cybernetics to democratic organisations should embody a similarly heuristic form and should be shaped with an emphasis on simplicity and ease of understanding. This might mean foregoing reference to cybernetics as a scientific vocabulary altogether in situations where reference to it might result in confusion, misinterpretation, or fatigue. Democratic cybernetics should be preoccupied with the production of results which are favourable to democratic contexts, rather than allying itself with the language which traditionally dominated within cybernetic circles.

My investigations of democratic cybernetics produced a wide range of examples of these kinds of eased, contextually embedded forms of cybernetics being expressed by many of the people I spoke with during my research, a couple of which were initially introduced in the last chapter in relation to cybernetic pedagogy but are now developed to defend an alternative approach to democratically communicating cybernetics as a whole. The following are six examples of re-translating, or *reformulating* cybernetic concepts, models, and language, into more democratically conducive language.[73]

6.5.1 (1) Body-brain metaphor

First, Swann's comments regarding the explication of cybernetics to school children can be seen as the most elementary and embryonic manifestation of a heuristic approach to cybernetic communication (see section 5.2.3). His discussion of the body-brain metaphor provides the simplest example of the kind of rough, improvised sketches of cybernetics which might help it to be understood more broadly.[74] It should be noted that the body-brain metaphor is an extremely common one within cybernetics and systems thinking. Within the texts I consider in this thesis alone the image is invoked frequently by various authors. Most notably, it is perhaps the most often used metaphor within Beer's writings, with the possible exception of electrical circuitry (Beer, 1995). More than being a reoccurring image within his work, the

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[73] Each of these experiments in reformulation has different qualities, successes, and failures, and only begin to outline the variety of forms heuristic translations of cybernetics might take. It will become clear through a consideration of each of these examples that they are expressed through various forms of language and communication, much like the previously discussed pedagogic approaches. There are texts, topics of discussion, drawings, performances, and diagrams, all of which show different techniques of translating cybernetic language out of its scientifically rigorous mould and into forms which might convey it with greater clarity.

[74] As was discussed above, the use of metaphors such as these demand that care is taken not to play into presumptions about their implications (such as the assumption that the brain 'controls' the body in a naive 'command and control' sense of the 'intelligent' head controlling the 'unintelligent' body). It is likely that introducing such a metaphor would be interpreted altogether differently by a manager or a class of school children, since presumptions and worldviews play as significant a role in the interpretation of metaphors as the way in which they are articulated (this is discussed further in a note during section 6.5.1). Despite this, it serves as a simple example of how a cybernetic model might be framed, and how it might re-frame presumptions about how the body and human organisations work, if used effectively.

body-brain relation is the system which his entire VSM emerges from, as was discussed above (see section 2.6.2). It is unsurprising, then, that writers like Walker, Espinosa and Swann often refer to the same core cybernetic metaphor. In an earlier section of the thesis, we saw Jones argue that the body is an exemplary metaphor for envisioning how to communicate systems and cybernetics language more comprehensively (see section 2.2) (Jones, 2018). Furthermore, the metaphor is often invoked outside of cybernetics and systems discourse, offering the possibility of connecting cybernetic discourse with other areas of discourse both within and outside of academia (notably including Rancière, who will be a central subject of the next chapter (Rancière, 2010).

6.5.2 (2) Suma's doughnut metaphor

The second instance of simple heuristic language was also discussed earlier. Walker and his colleagues' work at Suma avoided much of the technical language of the subject, in part because of their amateur understanding of cybernetics at the time. Suma's conversation around the 'doughnut' metaphor was used as a means of discussing the distinction between autonomic and meta-system and was a centre-point around which their understanding of the VSM, and its relevance for their self-governance, was developed. The group saw itself as non-hierarchical, better characterised as a circle than a pyramid, lacking in a central leader. But what was at the centre of the pyramid which held their disparate roles together? The discussion surrounding the lack of 'centre' (like a doughnut) at Suma contextualised their discussion of the cybernetic notion of meta-system and led to the development of a wider set of vocabulary to characterise their organisational model. Speaking of the approach members of Suma took when implementing the model, and the terminology which emerged from their implementation of it, Walker said:

"We kind of adapted Stafford's terminology to fit our particular situation. Things like the doughnut, the segments, the sectors, and the hub. The vocabulary evolved around these ideas." (Walker, interview 6)

6.5.3 (3) Duque and Espinosa's work with Indigenous communities

The final example which was already discussed in these findings came from the two examples provided by Espinosa in the last chapter, the first concerning a project in the Caribbean where performance was a key mode of expression, while the second came from Duque's work in Columbia with Espinosa, which saw them communicating cybernetic principles through different materials, using drawings to convey the implications of cybernetic self-organisation, rather than attempting to communicate the intricacies of the VSM itself (Espinosa, 2018).[75] Espinosa described the Columbian indigenous community as intuitive *"systems thinkers"* due to their thinking being *"so in line with nature"* making communicating the ideas to the community easier than with those with a hierarchical disposition, despite the substantial language barrier (Espinosa, interview 1). Espinosa argued that many of the suggestions that she and her colleague brought to the community were congruent with governance practices which the community had maintained themselves for generations, but which had begun to be broken down in recent years, since *"Western civilisation had arrived, you know, with Coca Cola and hamburgers and all this sort of rubbish"* (Espinosa, interview 1). This led to Duque encouraging the community to begin

"reasserting some of the [old] *structures that they put in place, which were really well designed from a VSM point of view."* (Espinosa interview 1)

6.5.4 (4) Phillips' VSM group activity

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75 Walker and Espinosa also had members of Cloughjordan draw their impressions and interpretations of the community's organisational problems in the form of cartoons (commonly referred to as 'rich- pictures' in soft systems methodology (SSM)) during their time with them (Espinosa, 2013).

A similar example of performative expression of cybernetics comes from Phillips' techniques for teaching the VSM (though without the substantial language barrier), which Walker discussed enthusiastically. Walker told me how Phillips would teach groups to use the model through collective performative exercises which clearly left a lasting impression on Walker, as well as members of the Cloughjordan community at the time. Walker sang the praises of his approach, describing how on one occasion, while working with the Permaculture Association, Phillips assembled participants into various circles, each of which represented a sub-system of the VSM, and guided the group through the various practical aspects of the model:

> *"What Davie* [Phillips] *did, he went out on this courtyard on this beautiful sunny afternoon in Catalonia and drew this big circle on the tarmac. And he said, "OK, this is our whole system. This is what we're looking at. And what we're looking for is the identity of the whole system". And then he drew these little circles inside it. "So, these are the bits that actually do what the vision says about the identity." So, these defined the systems one. And he said, "OK, Now I want some volunteers to be in the primary activities" so people jumped in these circles, and it evolved from there. It was just great. It was just a really great afternoon. And people said, "OK, well now we've got something happening from the outside, so how are we going to respond to that?". And somebody said, "well I'm one of the system ones and I'm going to do this, this and this". And then system three was saying "yeah but you know we can coordinate this and get some synergies out of this". So, it's just great, the whole thing was really exciting."*
> (Walker, interview 1)

6.5.5 (5) VSM bike metaphor

Another heuristic approach to explaining cybernetics was reflected in a piece of writing provided by Walker, written by a member of Cloughjordan ecovillage during the period when there was a lot of excitement and inspiration being stirred up among members regarding cybernetics and the VSM. One member of the Cloughjordan community, Dan, was so inspired by Phillips and Walker's articulation of the VSM that he devised a short text outlining the model in the form of simple terms to describe the diagnostic tool to others. This articulation

of the model made effective metaphorical use of the bike and its rider in articulating the principles of the VSM in simple terms. Walker said that the text sparked productive discussions in the group during his time working there. Dan's short exploration of the VSM provides a more elaborate example of a heuristic reformulation of cybernetics than the above accounts since I was given access to look at the short text itself in full [available in full in the appendix]. He outlined the basic ingredients of the VSM in simple terms, beginning with a description of recursion by referring to the form of a tree:

> *"its trunk grows out of the ground, limbs grow out of the trunk, boughs grow out of the limbs, branches grow out of the boughs etc. until the twigs that form on the outer reaches of the canopy. All of these different levels of growth follow the same essential pattern and resemble each other in miniature.*" (Dan, VSM Bike)[76]

Having introduced the concept of recursion Dan moved on to introduce other concepts at the basis of the model; introducing viability, environment, balance, and mentioning 'variety matching' before beginning to describe the five subsystems which make up the VSM. He introduced these five concepts in very brief terms, taking up only a few hundred words at the outset of his concise six-page text. Viability, he said, is:

> *"like riding a bicycle, as you go along you maintain your balance by making constant adjustments to your steering in order to keep yourself upright. If you're good at cycling this process will be easy and almost imperceptible, but if you've just started learning then you will probably find balance hard to achieve. Many organisations can be somewhat Wobbly as they try to organise themselves without the steadying Parental hand of the old Hierarchical Command-and-Control systems."* (Dan, VSM Bike)

This step by step, brief and common-sense approach to conveying the model reflects the approach Walker took to teaching cybernetics and the VSM (discussed previously during

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[76] Dan's initial introduction of recursion through the metaphor of a tree, diverting from his otherwise focused discussion of cycling, shows the sometimes-messy twists and turns that heuristic expressions of cybernetics might take. A messiness which should not simply be dismissed as problematic, since it is much more at home in democratic organisations than the rigorous vocabulary with which cybernetics has traditionally been described.

section 5.2.3). As Dan introduced each of the five subsystems, he provided a few sentences describing the general function of each of them before integrating the model into his thematic bike metaphor. First, he summarises the function of S5:

"System 5 is what we are about, our identity. It is the meaning of why we are doing what we are doing. System 5 is the sphere of Policy and has a twofold aspect. On the one hand, an organisation has to decide who makes the policies and how far the process of involvement stretches. The other aspect of system 5 is in making sure that these policies are held to. Someone has to take on the task of making sure that the whole thing stays on track according to what has been agreed as Policy." (Dan, VSM Bike)

Connecting S5 to the metaphor of the bike, Dan said:

"In our cycling analogy System 5 encompasses what philosophy to take (it's a nice day, let's take a scenic route), and our risk management (going safely and slowly, rather than fast and reckless). System 5 also ensures we are on track (is this the way to the park, or did I take a wrong turn?). This is not a static fixed situation and what we do can change at any time (if it starts to rain, we might decide not to go through the park after all) – although we are still working within the same System 5 policies." (Dan, VSM Bike)

He goes on to repeat this process for each of the other five subsystems. S4, he says:

"watches out for threats or opportunities on the way (a bag of chips in the road, that 4x4 reversing out of its driveway, the smell of fresh bread from that little bakery) and plans our responses (swerve around the chips, let the 4x4 out, stop to buy lovely bread). It has autonomy within its mandate, but alerts System 5 when Policy decisions are needed (it looks like it's going to rain, and I can get home if I cycle very fast, is this OK?)" (Dan, VSM Bike)

Dan's short and simple articulation of the VSM provides a concise demonstration of how a complex and inaccessible model can be recast in simple and contextually appropriate terminology for a democratic organisational community. It shows in clear terms how one might go about presenting a complex system like the VSM in language which is eased, by using

colloquial language and brief visual metaphors, relevant to that group, to convey complex concepts in simple terms.[77]

6.5.6 (6) Phillips' jellyfish VSM

A final example is Phillips' 'jellyfish' re-articulation of the VSM, a more elaborate reformulation of the VSM which was the diagnostic tool around which Cloughjordan oriented its self-governance for the period in which the VSM was their explicit organisational model.[78] Phillips had presented his reformulation of the VSM to the Cloughjordan community through a slide-show presentation which I was provided access to. Figure 2 shows the VSM structure in a circular form in which each of the VSM subsystems are presented as circling around the centrally positioned system three, which is summarily labelled as being responsible for 'coordination' among the group.[79]

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[77] Despite most of the evidence pointing towards a preference of using simple, contextually relevant metaphors, Walker also indicated that there were cases where people he worked with latched on strongly to diagrams and metaphors despite their divergence from imagery more familiar to the group. Recounting his experience of discussing the VSM with the Permaculture Association he said:

> *"Afterwards I was saying, you know, "I really, I hope you guys didn't mind the diagrams because they look much too much like circuit diagrams and you know, for you guys it would be nice if they look like a field of vegetables or something". And a couple of them said "Oh no, we really like those diagrams. We really like the circuit diagrams. They really make a lot of sense" so it's fun to see the things that you don't expect people to take to and they do."* (Walker, interview 1)

[78] This model was first introduced to me while observing the Suma discussion I discussed earlier (see section 4.2), in which Walker introduced the model to the discussants by saying "*it looks a bit like a jellyfish*" (Coulthard, 2013). During our various conversations about the model, we always referred to it as 'the jellyfish VSM' but didn't discuss who came up with the name specifically.

[79] System 3 was materialised at the ecovillage in the form of a 'coordination group' made up of representatives from each of their primary activity groups (system 1s) (Walker, interview 5).
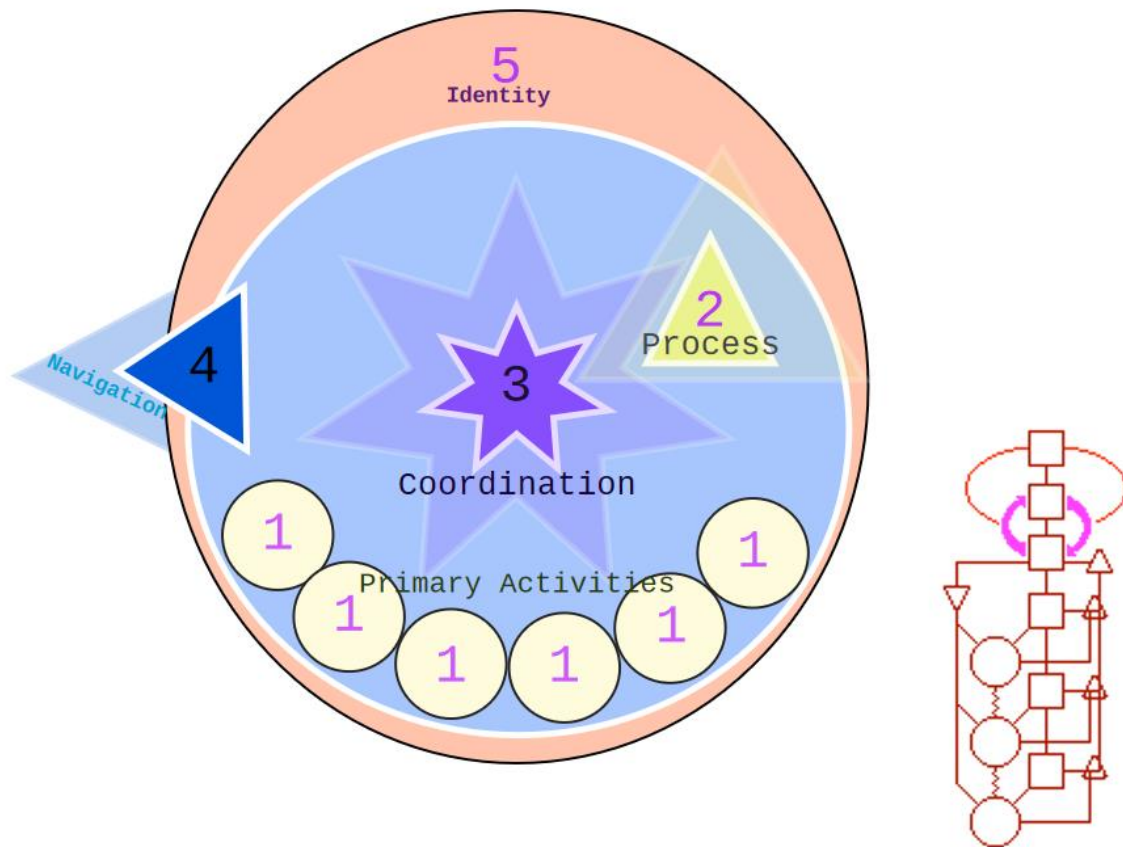
Figure 2: jellyfish model of the VSM, developed by Phillips at Cloughjordan ecovillage.

This representation of the model makes two considerable changes to the original version of the VSM. First, it is represented in a circular form, removing the model's apparent hierarchical dimension in favour of a circular representation, more conducive to the democratic context to which it was applied. Perhaps more theoretically impactful than this, the centre of the model is occupied by S3, associated with coordination, and all the other subsystems orbit this coordinative function, including S5 (or 'identity') which occupies the 'highest' position on the original VSM's logical hierarchy developed by Beer (which he describes as *"higher management"* (see section 2.6.6), as well as the *"the cortex"* and *"higher brain functions"* (see section 2.6.2)). This shifts the visual representation of the model from highlighting the 'top' (where the higher management make policy decisions) to the 'centre' (where representatives from primary activity groups come together to make governance decisions) is

a significant alteration in the presentation of the model, while in the same move diverting emphasis from identity and policy (S5) to coordination and cohesion (S3).

Interesting to note here is how the metaphor of the jellyfish correlates with the changes to the model made by Phillips. Jellyfish are not only exceptionally viable systems[80] but also lack a brain, an especially interesting observation when one considers the centrality of the brain as the grounding metaphor at work in Beer's VSM and the apparent de-prioritisation of the 'cortex' (system 5) in Phillips' representation of the model.

Much could be said about this fascinating alternative representation of the VSM, as it is a far more ambitious expression of the kinds of heuristic translations of cybernetics which I have discussed here. On the one hand, the model is a more appropriate way of representing the VSM to democratic audiences, and to Cloughjordan specifically it constitutes an excellent example of the kind of contextualisation, and to some degree easing, which I associate with low cybernetics and reformulation. On the other hand, it bears repeating that Cloughjordan's implementation of the VSM eventually led to hostility growing towards not only the VSM but more broadly towards cybernetics as a paradigm (despite the sociocratic structure the group transitioned to emerging from a similarly cybernetic source). While the jellyfish is much less complex than Beer's more technical circuitry inspired diagram,[81] perhaps the easing is only skin deep since the different aspects of the jellyfish remain far from self-explanatory. In a sense then, Dan's explanation of the VSM is perhaps more effective at actually elucidating the model than Phillips' jellyfish, since the latter may have invited the most learned in *"VSM speak"* (as

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[80] They may be one of the most viable organic systems of all, if one is to measure viability by the 100s of millions of years they have survived, or by one species of jellyfish (Turritopsis dohrnii, or 'immortal jellyfish') which is the only natural example of transdifferentiation, in which adults of the species can transform back into polyps, thereby retaining the same cells intergenerationally and earning the title of 'immortality'.

[81] Walker said, during his discussion with members of Suma, that Beer had once attempted to produce a similar version of the VSM to the jellyfish, without some of the simplifications Phillips had omitted, saying *"Stafford tried a circular diagram, but he said when he'd finished the Meta-system looked like a big spider in the middle of a web"* (Coulthard, 2013)

Dan called it in his text) to elaborate on the unsaid details of the model, bringing back in the technically dense language which led to some feeling less able to equally contribute to the ecovillage's shared vocabulary, leading to their alienation from the democratic process.

6.5.7 Heuristic cybernetics

These six examples exemplify different manifestations of what I have called a 'heuristic' way of articulating cybernetics, oriented around the use of easy language and contextualisation of the lessons of cybernetics in forms which are appropriate for the audience in question. The final example in particular shows the cautiousness with which such heuristic expressions of cybernetics should be taken, and the potential pitfalls of presuming an understanding of its vocabulary in communities where cybernetics is a language only shared by some, to the detriment of others. In some cases, unless one is providing a lecture on cybernetic terminology (as consultants like Walker and Espinosa often do to great effect, as I showed in the last chapter), the avoidance of cybernetic vocabulary altogether might at times be preferable. A combination of simple language, contextual metaphor, improvised examples, drawings, performances, heuristics, and even *"iconic representations"*[82]*,* may be more effective in some

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82 This phrase is used by Eden Medina during her discussion of the design of the Cybersyn Opsroom, which in some sense might provide a 7th example of a heuristic expression of cybernetics which is more conducive to easy use by non-experts, using 'big hand buttons' to enable workers to operate the system with ease:

> *"In the Opsroom, all industries were homogenised by a uniform system of iconic representation, meant to facilitate the maximum extraction of information by an individual with a minimal amount of scientific training. Beer recognised that the men sitting in the chairs would not possess skills as typists - an occupation typically performed by female secretaries. Therefore, in lieu of the traditional keyboard the Opsroom team designed a series of large 'big-hand' buttons as the input mechanism that one could 'thump' to emphasise a point... Moreover, Beer claimed the big-hand design made the room appropriate for eventual use by workers' committees as opposed to a 'sanctum sanctorum for a government elite'.'"*
> (Medina, 2006, p589-590)

She went on to discuss Beer's plans to produce more low-tech manifestations of the Opsroom which could be cheaply distributed across Chile:

> *"Plans to place low-tech versions of the operations room in each of the nationalised factories similarly strove to augment worker participation. These simplified rooms, with blackboards instead of projection screens, would assist worker decision-making through facilitated communication and greater visualisation of factory operations, and would create a mechanism for entering the command chain of higher management".* (Medina, 2006, p597)

contexts than introducing cybernetic concepts in their original (scientific) form (Medina, 2011). While these approaches may often not directly take the form of heuristics, they similarly take on what I have called a *heuristic approach*, providing a rough, imprecise, but satisfactory results, rather than rigorous articulations which are in danger of being misunderstood by some, and embraced so enthusiastically by others that knowledge divides begin to form. Such a heuristic approach is more likely to lead to good cybernetic communication, especially in democratic contexts, though it remains an experimental and fledgling approach which is likely to result in failures and unexpected turns.
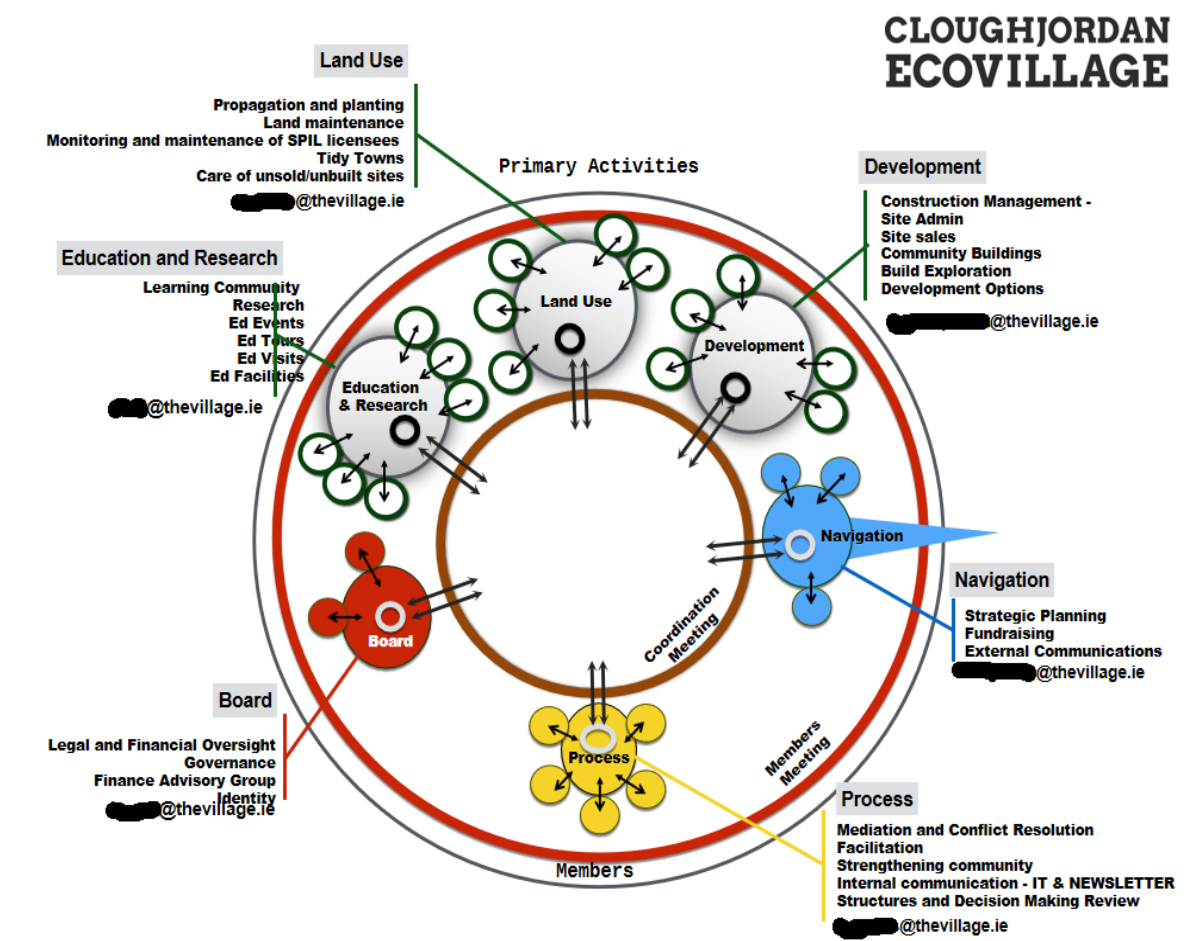
This example is indicative of how low cybernetics might begin to be thought about in relation to not only forms of framing and explanation, but also in terms of the design and production of operational systems (whether made from computers and monitors or pens and paper).

Figure 3: jellyfish VSM, mapped onto Cloughjordan's specific structure.[83]

6.5.8 Amateur heuristics

A significant observation regarding several of these examples to be noted is that they are often formed and expressed by non-experts, even in cases where they are translating technical models like the VSM. While the line between amateur and expert is unclear in several of these cases (and will be more deeply problematised in the next chapter) several of the above discussed examples can be characterised as coming from amateurs. For example, I already mentioned that Walker and his colleagues were new to the VSM during the discussions about the doughnut metaphor, and despite being one of the foremost experts on the model working today, he himself suggests that there is only one real VSM expert:

> *"Angela and I work in non-expert mode, OK? For a lot of reasons, but I think anyone who worked with Stafford realised that there was only one expert on the VSM and the rest of us are still scrabbling about in the dark!"* (Walker, interview 5)

Phillips too, although very well versed in cybernetics and taking on the role of pedagogue in both the fourth and sixth examples, has no formal training in the subject to speak of and is entirely self-taught (as Espinosa emphasised during section 4.4.1). Dan's bike metaphor was an unabashedly amateur expression of passion for cybernetics. Swann's suggestion of using basic metaphors to teach cybernetics may come from a prominent cybernetic thinker, but the idea was expressed in an off the cuff way and is far from becoming a fully formed approach or practice, leaving only Duque's work in the Amazon as a professionally taught expression of heuristic communication in cybernetics (and perhaps Cybersyn's heuristic gesture noted above). These kinds of folk reformulations may be effective means by which a group can both

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[83] Both figures 2 and 3 represent the same jellyfish model, with the first showing it in a generically labelled 'invariant' form, appropriate to be shown to any democratic group, whereas Figure 3 shows the same model complete with its contextually specific information unique to Cloughjordan in particular. These two figures can thereby serve as invariant and contextual representations of the same model.

teach themselves a complex model more easily, and a means by which teachers, consultants

and others might more effectively learn about and teach the model.

6.6 Low cybernetics

The use of heuristics, as a way of understanding the articulation of cybernetic models in more easily understood and contextually grounded, often amateurish, terms, has emerged during this research as a key technique by which cybernetics can be impactful in democratic organisations without leading to cybernetic fatigue on the one hand and knowledge priesthoods on the other. These *heuristic reformulations* of cybernetics are a key outcome of my research and show a particular way in which cybernetics can be made accessible via its clear communication. These heuristic reformulations indicate a way to return to the discussion of low theory in my methodology chapter, in which I introduced it, via Halberstam, as a *"mode of accessibility"* which assembles a hodgepodge of materials which *"refuses to confirm the hierarchies of knowing that maintain the high in high theory"* (Halberstam, 2011, p16). These reformulations of cybernetics have sometimes been incomplete, improvised, messy and in part failed attempts to re-articulate cybernetics in a democratic mode. While they do not provide perfect exemplars to model and imitate, they offer paths of further exploration, meditation, and experimentation during the difficult process of democratising a subject which emerged out of a disciplinary and highly technical science.

The failures of these attempts at reformulation, as much as their successes, indicate that the translation of cybernetics into democratic contexts has less to do with simply transferring knowledge of its terminology to others, but of producing a sense of the meanings and implications of cybernetic lessons, whether by translating that terminology into more appropriate terms (as I showed in many of the above examples), or by foregoing explicit reference to cybernetics altogether while retaining the same conceptual structure (as sociocracy has done so effectively). Cybernetic vocabulary is secondary to the outcomes its application produces, and I have shown evidence in this research that invoking cybernetic terminology may at times be counterproductive to the effective outcomes it aims to produce.

In some cases, the avoidance of cybernetic vocabulary might be a more effective means of producing meaningful and desirable outcomes in an organisation. This is indicated most directly by the hostility towards cybernetics I saw from a vocal minority in both the cases of Suma and Cloughjordan, despite both organisations later enthusiastically embracing perhaps the most successful democratic application of cybernetic governance to date: sociocracy. In this sense, sociocracy might act as an example of how cybernetic lessons can be embodied in a model effectively without reliance on the terminology of cybernetics, and the reaction of disgruntled former VSM practitioners evidences the effectiveness of sidestepping technical vocabulary in favour of simple terminology which can be utilised and spread easily by participants. Models such as this use simple, direct, contextually grounded language to describe practices which are designed with cybernetic principles in mind, but often do not refer to those principles, and when they do, their cybernetic lineage is rarely emphasised.

My examples of heuristic reformulation show a second path the effective communication of cybernetics might take in democratic organisations, approaching the articulation of cybernetics not by embodying it in systems which make little reference to their technical origins, but by translating its scientifically grounded concepts and models into forms which evade reference to the inaccessible vocabulary from which they came, while retaining and recontextualising the relevant implications of those ideas. In either case, these ways of sidestepping the inaccessibility of cybernetics - in favour of language more at home in democratic organisations - denote techniques of articulating cybernetics which evoke greater *participatory clarity* and might eventually lead to cybernetics' *democratic pedagogy*.[84] Moreover, they indicate routes

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[84] Furthermore, it should be noted that knowledge does not exclusively flow from complexity to simplicity, from high to low theory – being compacted and eased along the way. It also flows from simplicity to complexity, as concepts like stigmergy and Conway's famous *Game of Life* elegantly demonstrate. In this sense beginning with participatory clarity, facilitated by low cybernetics, might become a jumping off point, leading to a group's development of more complex cybernetic language over time as their shared understanding stacks on top of more elementary beginnings. If this can be maintained without the reintroduction of priesthood-like knowledge inequalities among the group, then a more complex form of cybernetic self-governance and communication might be rendered viable and sustainable by democratic groups.

towards communicating cybernetics in ways which shake off its propensity towards reinstating

the knowledge hierarchies common to forms of high theory.

6.7 Invisibility and common-sense cybernetics

In a sense I am here describing low cybernetics as a means of rendering cybernetics invisible, which is to say using it in a way where it can be conveyed without resting on 'cybernetic' vocabulary at all (conventionally understood). Drawing on its traces in the discussions at hand and extracting its implications from the situations in which an organisation finds itself may be a more effective means of producing outcomes conducive to effective organisation than trying to embody a complex vocabulary among a community of participants with varied ways of understanding and an uneven distribution of *cybernetic intuition*.[85] Cybernetic vocabulary, I argue, can at times mystify the quite simple principles it refers to and outcomes it aims to produce. Low cybernetics directs itself towards the uncovering of these outcomes without the inaccessible detour through scientific vocabulary which it often takes. As Walker said of the outcomes of the successful implementation of cybernetics at Suma:

> "*Once you've done it, it's just incredibly straightforward and obvious. I'm sure I must have told you my favourite Suma story, which is that when I started, I was accused of science fiction. And a year later everybody said "well it's just obvious, isn't it? It's just such an obvious way to do things". And I remember telling Stafford that story and he said "yeah, the thing about my work is that when it works, it works so well that everyone just thinks it's obvious! And all the high variety stuff which has been behind, working out how to do that kind of gets forgotten. I mean, you do it and it works and that's what it's all about, really."* (Walker, interview 4)

The fading of cybernetics into the background of the organisation which Walker describes can be dramatically contrasted to what happened at the ecovillage, where the explicit and enthusiastic use of cybernetic terminology eventually led to alienation from participation for

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[85] This indirect form of discussing cybernetics was often what I found to be most effective during my own research, as was noted during the methodology discussion (see section 3.3.4).

some members, despite its appeal for others. Walker described the enthusiasm with which some members embraced the vocabulary, and the contrasting bewilderment of others:

> *"That was another issue at the ecovillage, there was this really strong group of people who really understood it, and* [the chair of the meetings] *would say "right, we're going to do system 3 now", she didn't say we're going to talk about ways we can work together, she said this is the system 3 session, this is the system 4 session. You know, they were into it to that level. For people who understood it, it was enormously useful, but for people coming in?... I remember one meeting some guy saying "what's all this system 3 stuff? I have no idea what you're talking about.""* (Walker, interview 6)

This was also an issue I came across during my work at HG, though in a less dramatic sense. As has been discussed, three members of the group (including myself) expressed great excitement about cybernetic concepts and made frequent references to it but found that this was out of step with the fourth member's ways of speaking about these subjects. This leads back to my discussion of *cybernetic intuition* and those without it. Drawing a dividing line between the cybernetically inclined and those who are not now seems more problematic, since so long as such a division exists, those without a 'systems mindset' will find themselves unable to participate as equals in discussions regarding cybernetics and systems.

What we are after then, to paraphrase the comments made by Beer regarding consensus and responsibility (see section 2.6.7), is not a sharing-all-over-the-place of cybernetic vocabulary, but a driving down of its level of accessibility (Beer, 1975, p286). To put it another way, cybernetic intuition should not be taken for granted and regarded as a natural state of things, but a challenge which low cybernetics seeks to oppose through cybernetics' more amenable articulation.

6.7.1 Cybernetics in common-sense terms

Such inequalities are less likely to emerge if cybernetics is treated not as a vocabulary for organisations to embody and use, but as a body of work to learn from and apply in a

contextually relevant way. This might take the form of using non-cybernetic language and form to express it, since such scientific vocabulary tends to be inappropriate outside of communities of experts (like Metaphorum & SCiO) or small groups where interest and familiarity with the subject is unanimous. While design groups with a unanimous interest in cybernetics (or at least familiarity with its terminology) might find deep discussions of its vocabulary fruitful, this is far from guaranteed. Earlier I showed Phillips and Walker argue that cybernetic systems need not explicitly reference their cybernetic lineage and their users need not understand their origins (see section 4.6.2). Now I extend this argument further and say that cybernetics is, at times, practised best when it is not framed as cybernetics at all, but rather in common-sense terms.

A common-sense approach to framing organisational strategy was something that I saw frequently during my investigation of PK, whose approaches to governance are anything but conventional but are nonetheless framed by its members as flowing directly from simple and intuitive trains of thought. Indeed, despite the practices they use often being deeply counter to the norms of business - like the 'anti-quantity discount' and their refusal to use contracts in any of their agreements (other examples discussed in the next chapter during section 7.5.1) - the sensible nature of their policies have been largely proved by their successful commitment to them for over two decades and the seeming lack of issues which have resulted from them. The framing of these quite radical policies as obvious and common-sense,[86] while being explicit about the logics which lead to them, is perhaps contrasted to the cybernetic tendency to justify its radical implications in technical proofs and vocabulary rather than to simply gesture towards the elementary logic underlying it, its favourable outcomes, and its

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[86] While on the one hand PK present their radical and unique policies as following quite naturally from simple reasoning, they also, as was indicated above (see section 6.4.1), present the 'normal' conventional ways of conducting business as 'abnormal' and unreasonable.

manifestations in the natural world. It is enough to observe its proven faithfulness to reality without marketing it in terms of scientificity.

Contextually embedded expressions of cybernetics often are not presented as cybernetic at all, it seems. Exemplary of this was the Suma member with a particularly vicious dislike for cybernetics and systems theory, who, after describing cybernetics as *"so last century"*, went on to describe sociocracy in starkly more favourable terms:

> *"Sociocracy on the other hand uses the most complex assembly in the known universe, the human mind in open communication with other minds to control the process (to use systems terminology). Even in systems terms it makes more sense."* (Coulthard, 2013)

This invisible yet active influence of cybernetics was also evident in organisations like CK, whose member Mark earlier claimed:

> *"We don't really talk about much publicly, but if you met us for five minutes, you'd realise that it's what we're* [all] *about"* (Mark, interview 1)

Jim's comments made near the outset of these findings (see section 4.1.3), in which he mentioned the spread of cybernetics everywhere in society without being referenced explicitly, is here cast in a different light. Rather than being a limiting factor on the proliferation of cybernetics, perhaps the invisibility of cybernetics is merely a result of its adaptation to different discourses and situations so that it can be made better sense of in those environments.[87]

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[87] At this project's outset I considered the lack of explicit discussion of cybernetics in organisational discourse something of a travesty, limiting shared comprehension of complex organisations. However, in the light of this chapter's findings the benefits of introducing cybernetics indirectly become clear. Those who indicate an interest in its lexicon will learn much from studying its texts, but others will gain more by pushing the text aside altogether.

6.8 Sustaining organisational heuristics

In Cloughjordan there was a hope that the organisation would unify around a shared cybernetic language to guide its action, and I showed how this became problematised over time, eventually leading to Phillips stepping back from participation in governance processes altogether. I showed how cybernetic language, intended to create a democratic and shared vocabulary, drifted into a form which functioned to privilege some voices over others, causing strife in the community and leading to greater turbulence rather than less. This highlights the stark difference between the vocabulary used by an organisation, whether in the form of a technical lexicon or a set of simple guiding heuristics, and the practical consequences which the use of that language produces. It shows how organisers need to remain constantly vigilant of the drifting of language from the meaning it aims to convey. How might organisations work in such a way that this sliding of language from the outcomes it aims to produce is prevented from leading to miscommunication and a loss of the purposes towards which it was introduced? This is a vital question for the articulation of low cybernetics, since the re-translation of cybernetics into more accessible terms comes with the risk of losing its conceptual potency, and the reiteration of those translations over time can also lead to a problematic shifting of meaning.

6.8.1 Organisational vocabulary and feedback

The process of feedback might be useful here as a way of seeing how a group can reflect on their shared ways of understanding and see how they change and adapt over time; considering how their language is used and how its meanings, applications and activities change as the group's composition, practises, and discourse shifts. CK show how regular, deliberate discussions about the trajectory, goals and intentions of the organisation can help members to stay oriented with one another and the work they do. Mark earlier emphasised the benefits

sociocratic governance affords in this regard when he argued that too often groups refuse to say, *"that thing that we've been doing in this meeting doesn't work"*. This critical self-reflection, Jack emphasised, is essential to retaining the group's collective ethos and sense of moving together towards goals which they all understand and share. CK perform regular sessions in which they ensure that their ways of understanding their work as individuals and a group remain on the same track, with regular project retrospectives, reviews of their shared vision, values and mission, as well as, in more recent discussions, deep discussions about the direction they want to move in as time passes and convenient practices become new norms:

"We find the best way that we improve our process and address all this stuff, rarely comes out of textbooks. It more comes out of the discussion and reflection piece. And we do that a lot. We have a lot of reflection moments in a given week or a two-week sprint or quarterly cycle, and even at the end of every meeting where we have these principles in our minds about what we want to be achieving as a group and what kind of group we want to be and then we keep on adding to these... But even then, we're finding the writing down these values and reading what other people say about the values, or the values of the system, the values of the organisation, the mission... that's kind of, it's alright, but really, we've actually started retrospecting those values as well.

Every week will pick up a particular aspect of the system we want to emphasise, for example, "openness", which is one of the scrum values. But it was also a value that we picked for our organisation. And then we realised, "hmm, I don't know how we always actually speak to those values practically". It's hard to tell. So, we've been exploring that on a weekly basis. Like "OK, so what about what we do here is particularly open? And how can we do that better over the next two weeks? Can we take inspiration from other models that we like from the scrum guide? What does the scrum guide actually say about openness? When did those principles or effects of that value actually show up?" We've done that internally; we've also done that with other co-ops. We have a weekly co-op call with other co-ops, and we kind of brainstorm common problems or challenges or goals that we have." (Jack, interview 1)

Jack said that retrospection was a beneficial process for CK, and argued that other organisations tend to put too little emphasis on reflective analysis of their language, principles, and practice:

> *"I'm very happy, I think we're all actually really happy with how much we do* [retrospectives]. *It's definitely not something that we've heard from other organisations as a priority, and we've explicitly heard that it sounds like we've managed to crack that in a way that other organisations haven't managed to, which makes it sound like it's been a real problem for other groups... we've developed this process in our organisation, but then I run it for other organisations as part of our consultancy work.*
>
> *At the end of a project, we want to retrospect how the process has gone and how we can better collaborate in the future and how they as an organisation can better internally coordinate themselves to collaborate with outside participants. As far as I know, at least from my own experience, that's gone very well. And it makes me wonder, is the reason that groups are very... not bad, but not very well practised at retrospecting their own thing, is it because they basically don't know what the process looks like? You know tactically, the kind of facilitation you use for those kinds of meetings or processes that happened between meetings? It is a practice; it is something that you get better at, and it's taken us quite a while. We're constantly changing how we refine our retrospective processes."* (Jack, interview 1)

In contrast, PK's open forum allows for this kind of communicative self-regulation to happen at a less scheduled procedural level, but also on a more continuous level, as philosophical, ethical and practical problems of the organisation's direction, the extent to which they practise the principles they promote, and other such reflective topics are a constant subject of discussion at work on the forum. I will show more evidence and in-depth examples of this continuous reflexive openness from PK in the next chapter in relation to my discussion of dissent and their forum.[88] In both the cases of PK and CK I observed the formation of an

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[88] I will also emphasise the technological limitations of PK's approach to reflection and retrospection, owing to most of their communications taking place on a basic forum in written form (whereas CK's meetings take place either in person or over video calls on platforms such as Zoom).

environment in which the organisation's language and practice are assessed by the group regularly and critically through shared practices of self-criticism.

These processes and spaces of iterative feedback and self-adjustment do not attempt to reduce the extent to which the organisation's use of shared language shifts over time, but rather the opposite, guiding the sliding of language in such a way that it remains in sync with the group's orientation, values, goals and activities over time. Whether it is done formally or informally, it always involves the group asking itself whether what the organisation is saying and doing are paralleled with one another, or whether they are drifting out of synchronisation. This emphasis on iterative self-analysis must be regular and continuous, whether it happens at a formal or informal level, via process or space (about which more will be said during the next chapter, particularly during section 7.4). This is because both language and the conditions in which it works are in a constant state of flux and must be continuously reassessed, lest the organisation's stated goals drift from the practices they embody.

6.8.2 What language says and what language does

However such a process of feedback is expressed, it must remain constantly cognizant of the difference between the language used by the organisation and how it manifests in practice. To paraphrase Beer's famous phrase (often condensed into the acronym POSIWID), an organisation is not simply what it says about itself, rather *it is what it does*. For the members of democratic organisations to stay cognizant of the difference between these two things it must remain in ongoing conversation with itself regarding the extent to which it is doing what it says it is doing. When synchronisation begins to slip it must adjust one or the other (shifting

either its practices or its shared vocabulary for understanding them) so that it does not lose sight of either its goals or the means by which it pursues them. [89]

This self-reflective adaptation of language and practice is something that seems to have been lost sight of in the cases of Suma and particularly Cloughjordan's embodiment of cybernetic vocabulary over time. In those cases, the cybernetic parlance they used seems to have fallen out of step with the attitudes and perceptions of the members of the organisation over the long term, leading to some rejecting cybernetics altogether. Despite these organisations' attempts to render cybernetics more palatable and comprehensible, its scientific tone and the unequal fluency appears to have led to a deep sense of miscommunication among some within the group. This led to the intended outcomes of introducing the system being turned on its head, as I showed when Walker exclaimed that "*this whole thing about power structures emerging, which of course was the last thing that we wanted*" (Walker, interview 1). This implies that models, processes and (of particular importance here) languages *do things*, and what they do might differ from what they say they do. As Hilder argued, *"you have to take responsibility for the viability of what you're doing"* (Hilder, 2019). This might return the discussion to Phillips' jellyfish VSM and its implementation in Cloughjordan ecovillage. Despite the promise of a democratic re-framing of the VSM, a re-framing which was largely effective in conveying the model in more appropriate terms for its democratic audience, the results of the introduction of an explicit cybernetic vocabulary into the ecovillage nevertheless eventually

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89 We might even speculatively suggest that this incongruency between language and practice might be a limiting factor in cybernetic organisations like the Metaphorum community when attempting to devise more easily understood articulations of the VSM. During my discussion with Swann, we discussed the difficulty groups like Metaphorum have had in coming to agreements together, particularly regarding ways of articulating the VSM with greater clarity. He said:

> *"it's quite interesting for me that people who have been doing it for 20, 30, 40 years haven't hit on the way to communicate* [the VSM] *effectively yet, which I find really, really interesting. I don't know why that is,* [maybe] *it's because their aims are quite disparate? You've got some very right-wing people in that community, you've got business consultants, you've got people who work with coops, you know? It's very, very mixed, and maybe once it got to the stage of saying "Okay, we actually want to do something practically together" it would start to break down because they realised that actually we don't want to do the same things with it. Maybe that's partly why* [they] *haven't developed that."* (Swann, interview 1)

produced counter-productive and even undemocratic outcomes in the form of priesthoods and alienation from participation via fatigue.

Communicative contexts inevitably experience an ongoing shift in language and activity, and the two do not necessarily shift in unison with each other. Democratic contexts, in which the language used by the group is deeply diverse and varied among its member, are particularly subject to these linguistic and practical shifts, which are likely not to remain synchronous with one another despite their members best efforts. Hence, constant intentional revaluation of language, practice, explanatory models, and the gaps between them are essential to reducing this sliding of meaning.

6.8.3 Retaining concreteness

Despite the importance of minimising alienating technical vocabulary from inclusive governance processes, there is an equally important imperative to retain the substance of whatever concept, model, or pattern of thought cyberneticians and pedagogues hope to convey. One advantage of invariant cybernetics language is that it can be applied to varying organisational contexts uniformly with ease and without losing its underlying substance. The difficulty comes in articulating those ideas in language which is easily accessible to entire groups of organisers. While on one side, the example of Cloughjordan shows how technical vocabulary risks alienating participants over time, attending to this danger too closely risks the opposite effect of producing translations which are so contextually specific that they struggle to be transferred across contexts or sustained as context shifts. The 'invisibility' of cybernetics comes with it the risk of becoming divorced from the system of knowledge from which it was derived. Furthermore, it risks becoming divorced from the context to which it is applied over time as that context inevitably shifts. This was shown during my analysis of Suma, in which despite the VSM being conveyed in a less technical form cybernetic vocabulary still slid out of relevance for the organisation as the composition of members changed over time (see

section 3.7.5). The threat of losing the concreteness of cybernetics was conveyed best by Walker earlier when he underscored the importance of conveying the *"basic principles"* to people so that the frameworks remain capable of being transferred to varying contexts (see section 5.2.2). Additionally, there should be an emphasis on ensuring that those frameworks persist over time, as this is where democratic implementations of cybernetics have uniformly struggled (due to their dependence on expert knowledge and ongoing reinforcement of complex concepts). Furthermore, this principle is equally important in relation to retaining the underlying pattern beneath a particular model, concept or thought. Regular discussion of the extent to which users of cybernetic concepts, models and thoughts understand them in practical terms is important, whether those ideas are discussed in terms of cybernetics explicitly or their roots remain 'invisible'. When it is expressed in the form of metaphor (like the body-brain distinction) the implications, application and associations of the metaphor should be assessed and reassessed explicitly and collectively on an ongoing basis. Without such reflection one risks the ideas upon which they are based mutating into unfamiliar forms which are likely to reinforce pre-existing power structures, rather than democratically drawing them into contention.

6.9 Adaptability of cybernetic language

Returning to the discussion this chapter began with regarding my initial attempt to articulate a technical argument for the easy and contextual conveyance of cybernetics, this drifting between what one says and does is something I fell victim to in my attempt to utilise cybernetics in support of my findings. This experience showed me how easily one can slip out of making a useful contribution by too enthusiastically pursuing an exciting intuition or idea, couched in cybernetic parlance. This, I think, is a particularly acute tendency among those with an interest in cybernetics because the subject is so full of fascinating patterns with wide-ranging implications, the purpose of which are all too easily forgotten while enthralled in the possibilities which emerge from meditating too deeply on the potential consequences of their application, while losing sight of the concrete outcomes of the work one is doing.

While the far-reaching potentiality of cybernetics may lead to it being in danger of leading those who are inspired by it to lose sight of the purposes to which it is put, there is another more promising consequence of the subject's wide-reaching implications. The open-endedness of cybernetics makes it easy to fall into the trap of pursuing it down ever more obscure paths towards inaccessible and ungrounded theorising, but on the other hand, that same openness is what makes cybernetics so adept at being re-articulated and reimagined in distinct forms; its implications being carried into almost every discipline and discourse it touches. The adaptability of cybernetic language is what makes it capable of so easily changing its stripes, and of shaking off its technical vocabulary in its reformulation within democratic contexts.

The processes of reformulation - facilitated through the easing and contextualisation of cybernetics - is by no means exclusively applicable to cybernetic systems. However, the invariance of systems like the VSM, which are characteristic of much of cybernetics, make the process of reformulation particularly open-ended and adaptive to whatever organisational

context it is situated within. The same invariant patterns can be re-articulated in terms which are relevant to whatever specific organisational context to which they are applied. As Walker argued *"it's all about patterns of relationships"*, and the patterns of cybernetics are conducive to being overlaid onto all sorts of complex systems, whether machinic, organic, communicative, aesthetic, or the patterns that lie between these domains (Walker, interview 9). While many of the organisations I have considered have a notably ecological orientation (leading to the invocation of ecological metaphors) the same cybernetic concepts and models could just as easily be explained in relation to the way that animals, machines, societies, ecosystems, networks, or whatever other systems, operate. This is not a unique characteristic of cybernetics, but it is a core, fundamental dimension of it as a discourse, and few other subjects are so perfectly poised to be articulated in such widely variable forms.

This adaptability of cybernetic language leaves it well positioned to become integrated into democratic practice and rid itself, when appropriate, of the scientific and technical vocabulary from which it was born. Despite its historical roots in the sciences, cybernetics is far from constrained by its disciplinary roots, and if its most effective means of expression in a democratic environment is to put aside its expression in a scientific tone, then there is no reason that it should be incapable of finding alternative, less expert driven languages of expression.

6.10 Four heuristics to guide low cybernetics

This project's re-framing of democratic cybernetics in terms of heuristics - exemplified in the folk expressions of its lessons in forms such as Dan's bike metaphor, the Suma doughnut and the jellyfish VSM - show how cybernetic ways of seeing can be expressed in language which sidesteps the scientifically dense forms that some members of democratic communities have found to be inaccessible, unfamiliar or even divisive and polarising. This approach to cybernetics as a folk-discipline - emerging from the situated contexts in which its lessons are applied and amateurish sketches which render its complex concepts more easily understood - is what I have tentatively referred to as *low cybernetics*. Aside from the above discussed expressions of it, however, we are still left with little guidance of how to further explore and elaborate low cybernetics, and although I don't want to over specify how it might be expressed by others, I will indicate four simple heuristics to guide the exploration and expression of a low cybernetics to come.

How can the conveyance of cybernetics to non-expert audiences be done without losing the conceptual potency of the ideas in question? Espinosa, in reference to the 'holy grail' of articulating the VSM in democratic terms, argued that democratic expressions of cybernetics must remain *"accessible, easy to understand, and non-trivial"* (Espinosa, interview 1). With these standards of expression in mind, I propose four heuristics for pursuing low cybernetics:

1. The expression of such models in *concise* forms is an initial consideration in the process of forming a clear image of low cybernetics. Brevity in democratic groups is emphasised and is particularly important when it comes to learning multifaceted models and governance approaches. PK's OS modules being summarised in only a few sentences makes them more easily learned, adapted to, and understood by groups who undoubtedly are limited in the time they can spend learning the details of such models.

2. Second, the *accessibility* of low cybernetics is vitally important. Brown's emphasis on the distinction between simplicity and ease is informative here. While simplifying a complex model risks losing important aspects of it, conveying complex concepts in easier ways is essential to their successful articulation to non-expert democratic groups. This involves using practical examples which are relevant to the specific context at hand.

3. The other side of accessibility is *non-triviality*. The greatest challenge to low cybernetics is retaining the relevant lessons to be imparted while avoiding reliance on a lexicon of inaccessible vocabulary. Expressing a complex model in terms which are not only easily understood but also convey the salient implications of the model in question seems like an almost insurmountable task, but pedagogues like Phillips, Espinosa and Walker show that the accessible and accurate conveyance of cybernetic models is achievable (as was discussed in the previous chapter during section 5.2.3 and elsewhere). While the retention of the salient message at hand and remaining committed to a low theoretical orientation is a challenge which is bound to result in as many failures as successes, I contend that the difficult process is less a matter of deciding whether the risk is worth taking, but of deciding the way and extent to which it is taken. This is because democratic practitioners (apart from small design-based groups and perhaps those with a 'natural' systems orientation (see sections 4.6.1 and 6.5.3)) are unlikely to develop an evenly shared fluency in cybernetics as a language, leading to the shared vocabulary it was intended to become being undermined by the difficulty of sharing it to all. Nevertheless, Walker, Espinosa and Phillips' examples provide indications of how the challenging process of conveying cybernetics in a "*non-expert mode*" might be possible (Walker, interview 5).

4. Finally, *specificity* to an organisation's particular context is vital in conveying cybernetics in terms which are relevant to an organisation's specific situation. While the invariance of cybernetic concepts and models are in some senses their greatest strength, as I argued above, this does not imply that their most useful application should take on such a generalised and overarching form. In many ways, the process of articulating low cybernetics is the integration of invariant cybernetic concepts into the grounded discursive environments of democratic organisations, where the development of a technical vocabulary may constitute a detour from the everyday situations organisers find themselves confronted with.

These four conditions are a relevant set of heuristics to begin to think about cybernetics in terms of low theory. The attributes of being *concise, accessible, non-trivial* and situationally *specified* are likely to lead to more effective expressions of low cybernetics and may be remembered heuristically with the acronym *CANS*. As I argued above, fidelity to these conditions must be critically analysed on a continuous basis, lest the usefulness of metaphors slips and meanders away from the purpose towards which they were directed.

6.11 Summarising low cybernetics

This chapter has sought to return the discussion of cybernetics back to the methodological themes which I considered at the outset of this thesis. I considered the use of heuristics in democratic organisations as a means by which quite sophisticated organisational concepts, which often emerge out of the situated context at hand, can be conveyed among practitioners easily by looking at some of the heuristics which emerged from my research. Interestingly, these heuristics had quite diverse uses, with some of them denoting guiding principles to orient decision-making and organisational practice, while others were used to characterise various aspects of the organisation in one way or another, assisting participants in developing their collective shared vocabulary and shared conception of their principles, tendencies, and shortcomings.

These reflections on the use of heuristics as compact means of developing organisations' shared practices and self-understanding led me to expand my notion of heuristics into a method of communication, a strategy with which organisers and pedagogues can express concepts in concise, easily understood, contextually situated and inexact forms. The many examples I presented of cybernetics being conveyed in what I characterised as heuristic terms led me to suggest that a non-technical, rough, and improvisational approach to articulating cybernetics is more closely aligned with democratic and participatory organisations. What I call *low cybernetics* is concerned with finding means of expressing cybernetics in language which sidesteps, avoids, and re-imagines the technical vocabulary from which the subject emerged. Manifestations of low cybernetics take the form of expressing cybernetics concepts in terminology which is non-technical and relates to the context at hand, as I showed in the example of Dan's bike VSM and the doughnut discussion at Suma. Sociocracy, while itself not constituting an expression of low cybernetics *per se*, shows how the elaboration of a thoroughly cybernetic governance model while avoiding the technical vocabulary of

cybernetics altogether can become popular and integrated into organisations, even being embraced by practitioners who have developed animosity towards cybernetics.

Furthermore, those using cybernetics in democratic organisations must, I argue, constantly re-evaluate how it is used reflexively within the organisation to ensure that what it produces and what it claims to produce are aligned with one another. In some of the cases I considered, particularly at Cloughjordan, I found that the organisation's commitment to cybernetic vocabulary led to the alienation of some from the participatory process, undermining the stated goal of introducing cybernetics as a shared vocabulary to make collective sense of what the organisation was doing. While the alluring promise of cybernetics can lead to an over-enthusiasm in its terminology and form into an alienating and exclusionary discourse, its adaptability and proven record of becoming integrated into unfamiliar disciplines shows that it can overcome its scientific means of expression when necessary. I finally laid out four heuristics to guide future expressions of low cybernetics.

6.11.1 Key contribution from the chapter

The three prior findings chapters all contribute to the key outcome of this chapter: *low cybernetics.* I have shown that cybernetic models, language, and concepts must be articulated in contextually appropriate language for the democratic contexts in which they are applied. Over emphasis on engineering and scientific metaphors has been shown to be counter-productive for some, and a more varied use of metaphor and means of expression (such as drawing, performance, etc.) - adaptive to the contexts in which they are applied - has been shown to benefit the comprehensibility and sustainability of cybernetic models such as the VSM.

The chapter provided empirical support for these theoretical findings through an analysis of heuristics used within my case study organisations, as well as an investigation of case study

organisations who transitioned towards models with less specialised and terminologically dense language. Having discussed the kind of heuristic language used within my case study groups, I showed several examples of experiments in low cybernetics to demonstrate the reformulation of cybernetic language in practice. These findings show that the democratisation of cybernetic language requires, on the one hand, that the language becomes more accessible and easily understood for democratic participants, and on the other, that it is contextualised and integrated more closely within the specific situations in which it is applied.

Chapter 7 (Findings 4): Dis/agreement, trust, and spaces of dissent

"We might sum it up like this: "We understand that you are using the medium of communication to impose your language on us. We understand that you are lying when you posit the language of your commands as a common language. We understand, in short, that all universals in language and communication are merely a lure, that there are only idioms of power, and that we, too, must forge our own." The second possibility would argue the reverse, making community (of capacity) the ultimate reason for noncommunity (of the account): "We understand that you wish to signify to us that there are two languages and that we cannot understand you. We perceive that you are doing this in order to divide the world into those who command and those who obey. We say on the contrary that there is a single language common to us and that consequently we understand you even if you don't want us to. In a word, we understand that you are lying by denying there is a common language." (Rancière, 1999, p46)

"Throughout the 1960s and 1970s of my experience, it became more and more clear that whatever one might do to undermine hierarchy and autocracy in structural terms, in political protocol, or in social rubric, powerful influences tended to maintain the status quo ante" (Beer, 1994, p7)

"Equality: a word, from which everything else can be derived." (Lübbermann, Premium Collective forum, *Realignment Premium*))

7.1 Introduction

The previous chapter centred around the discussion of *low cybernetics* as a way of articulating the potentially inaccessible concepts, models and ways of thinking which make up cybernetics. This was done by, on the one hand, reducing their complexity through strategically selecting which are its most salient components, which I call 'easing', while on the other, connecting the models to organisational contexts to reduce their inaccessibility and abstractness. If this conception of low cybernetics can be effectively elaborated and further developed (while remaining at ease with the many failures and wrong turns it will take along the way) then the threat of cybernetics priesthoods developing (and the corollary fatigue) may be significantly ameliorated.

However, I take a different turn in my final findings chapter, moving beyond democratic *communication* of cybernetics and towards a democratic conception of *contro*l; not merely as it is conventionally understood in democratic cybernetics, as ways of structuring processes and agreements which lead participants into conformity with each other, but also as a means of breaking that conformity, undermining existing forms of control so that they might be mitigated or improved. This re-framing of democracy, as a force which resists the appearance of forms of oligarchic control, provides a radically different angle from which to view the relationship between cybernetics and democracy. In this vein this chapter follows Beer's mantra that *"it is better to dissolve a problem than to solve it"* by reassessing what is understood by democracy and control, and therefore articulating new grounds upon which technocracy and hierarchy can be undermined, disrupted and brought into visibility (Beer, 1993, p25).

To speak in more explicit terms, I will consider democracy not as a process of coming to agreements and consensus, but instead, following Rancière, as a means by which dissent can

be expressed. This understanding of democracy (and its potential facilitation through organisational design) provides the possibility of a *stage* emerging upon which undemocratic priesthoods might be undermined. It is through an understanding of democracy as dissent, I will claim, that a context can emerge in which the presumed prioritisation of some voices over others can be called into question by organisers. I will explore this heterodox conception of democracy by discussing PK's governance practices in detail and their inventive responses to the Covid pandemic, which emerged from their unique approach to democratic self-governance. They provide a powerful example of how dissent can be a positive and productive force within democratic organisations and can provide unique opportunities for responding effectively to unforeseeable circumstances.

7.2 PK, Covid and democratic adaptation

7.2.1 PK forum as a sight of agreement and disagreement

This chapter is centred around the forum maintained by PK and its exemplification of how dissensus can be used productively within democratic organisations to not only deepen the forms of democracy that it practises but can also have a key role in the organisation's ability to adapt to new conditions. As has been discussed already, PK's forum is the closest thing the organisation has to a regularly used shared workspace, since the organisation works almost entirely remotely. It is an online forum used to keep up to date with, discuss and learn, everything going on in the organisation. While day to day activity is often done through personal phone calls and emails, any discussions which implicate the organisation as a whole, or any decision important to the collective in any way, is discussed on the forum. Apart from PK's yearly face-to-face meetings, the consensus decision-making process is practised on the forum, making it the key space in which PK governs itself as a collective.

The forum has a backlog of discussions reaching back more than a decade of the collective's existence, and almost any question about the organisation or its two decades experience can be answered on the forum with some searching. With this incredible depth of recorded knowledge, and the time PK has had to gather this knowledge, comes a certain outdatedness to the forum. It is not specially designed for the purpose PK has put it to. It is a basic and generic board which allows for simple categorisation of posts, private messages and little more. This has led to extensive debates on the forum (discussed below) concerning its drawbacks and limitations. As a consequence of the logistical and technological limitations of the space there is some evidence that use of the board has declined in recent years, with the notable exception of the several months when the Covid pandemic was at its worst, in which the forum became much more active and many lively discussions took place as PK attempted to orient

itself to the worst crisis it had ever contended with.[90] It is in this context that much of my

discussion of the board, and what it represents for democratic cybernetics, is based.[91]

While most major decisions the collective makes are put to the collective via the forum, it is

vital from the outset to recognise that the making of agreements and decisions covers only a

small proportion of what happens there. Most important here is the way the board operates as

a space in which *anyone* who is a member of the forum (the criteria of entry being very minimal

(see section 3.7.2)) can initiate and participate in any discussion, and those discussions need

not be directed towards the making of decisions specifically. Updates, concerns, blue-sky ideas,

and questions of political philosophy are discussed on the forum, and it is often these

seemingly undirected posts and discussions that lead to new and unforeseen developments in

PK's approach to organising. Moreover, despite the suggestion that participation on the forum

is waning, the creative and inventive use of the forum appears to be the normal way it is used,

and while I will centre the discussion around Covid, this wide-ranging use of the forum appears

to be the usual way it is utilised.[92] To explore how the forum is used and the unique political

environment it creates, I will focus on the calamitous events of Covid and a thread which

discussed a more specific issue, though still connected to the broader crisis created by the

pandemic.

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[90] Two researchers I spoke with, who had also been provided access to the forum by the collective to conduct research, suggested that they had seen much more participation on the forum during the height of the Covid pandemic than they had observed both before and after the most acute period of the crisis.

[91] Despite the varying levels of participation on the forum the open discussion remains the norm for decision-making which might impact the group. While day-to-day activity is dealt with outside of the forum, important decisions are always discussed on the forum (or they are at least presented on the forum for discussion, even when no one raises issues, concerns, or additional input).

[92] While it is the case that activity on the board peaked around the time of the Covid pandemic, it may be appropriate for intense discussion to centre around times of turbulence and uncertainty in which the intelligence of the whole group is required to creatively solve complex problems, unlike the more 'day-to-day' work which occupies participants during less tumultuous times (which can be done via phone and email). This is indicative of how 'system 5' is often conceived of in the VSM (as becoming activated at times of uncertainty in which established norms/policy is insufficient to solve the problem at stake); being concerned with the 'outside and then' as opposed to the 'inside and now' (associated with system 3) (Walker, 1991).

7.2.2 Example thread one: Realigning Premium and the Covid pandemic

The emergence of Covid produced a massive threat to PK's survival, especially considering their near total dependence on venues, bars and festivals which were closed during the pandemic. Uwe said during this time that PK had experienced a *"a 95% drop in sales since mid-March, now in June the sales have risen slightly to just a 90% loss",* and the atmosphere on the forum suggested that long-standing members felt the threat of the collective collapsing altogether was significant (Lübbermann, Premium Collective forum, *Organisational Changes*). Uwe set out the situation they had to content with:

> *Festivals are all called off, events are partly moved online but many are also called off, and we presume that not all of our partners and customers, like cafes, clubs, bars and so on, will withstand this crisis. That means: we must on the one hand reduce expenditure (makes ourselves smaller, but let the affected people decide) and on the other hand expand some jobs that we need (rebuilding, perhaps new products) or create jobs that people need to have an income (make ourselves big) and through that not leave anyone hanging"* (Lübbermann, Premium Collective forum, *Organisational Changes*)

Several threads were initiated in response to the acute crisis PK found themselves in. These discussions revolved around generating ideas and approaches to surviving the crisis and deliberating over the implementation of those potential solutions. A wide variety of ideas emerged from the discussion and members were encouraged to make suggestions, provide evidence that they were achievable and contact relevant people to enable these ideas to come to fruition. The subject of coming to a consensus around one or more ideas was much less of a focus than logistically facilitating their implementation, or the expression of concerns regarding the viability of one idea or another, as well as the alignment of these ideas with the principles and policies the collective is committed to. Everyone jumped into action during this period to suggest means of keeping the collective alive: workers, suppliers, and customers

among them. Several specific issues were identified and discussed in detail by the members of the forum. These included:

- There was a commitment to, from the outset, avoiding any solution which would result in greater costs being put onto customers because of the financial problems PK found itself in (as was alluded to in Lübbermann's statement above). This would not only go against their core principles but would reduce the sense of trust and commitment from their customers.

- Developing new products: a range of new potential products and markets to move into were suggested by members of the forum. Part of the rationale was to diversify the goods produced by PK so they could become less dependent on a single type of product (and consequently on the health of a particular market), which had led to a vulnerability when soft-drink distributors were disrupted by the pandemic. These suggested new production avenues included a sugar-free version of their cola and a larger 0.5l version, selling the raw materials that made up their cola products, and even selling gummy bears. It was agreed, however, that these new products could only be introduced once financial stability was re-established.[93]

- There were also significant problems with overspending and a lack of accountability in payment requests across the collective, which Uwe focused on as a key vulnerability in need of a response and is the subject of the next section (see section 7.2.3).

- The crisis also brought into view the threat of power consolidation by the orga-team which would take decision-making power away from the collective and into the hands

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[93] Importantly, it emerged from the discussions that the production of cola itself was not what the members were part of the collective for, and instead the working culture, organisational approach and democratic character of the organisation took precedence. All who spoke up were happy for the organisation to expand beyond the production of a cola drink into a variety of other areas, and to make the most of the network of contacts, suppliers, and knowledge the organisation had gathered to expand into new markets.

of a smaller sub-group of more specialised members, as was alluded to in the previous

chapter during the discussion of the 'two-class collective' (see section 6.4.1).

The pandemic became a site for radically reassessing the organisation and re-evaluating many

of the ways they worked. On the other hand, the abandonment or re-evaluation of the principles,

policies, and commitments which the collective had were almost never brought into question,

and their identity as a group was palpable.[94] These discussions were about a lot more than only

moving towards a decision together. Of course, decisions were made during the discussion,

and they played an essential role in PK's responsiveness to the crisis, but the most definitive

feature of the discussions, I wager, was the *generation of ideas* by the collective rather than

the mere deliberation over which possibility to pursue. Where possible, as many of those ideas

as possible were sought after. Although the now extremely limited resources at PK's disposal

acted as a constraint on the variety of possibilities which could be pursued, actions which could

be taken without the significant use of resources (such as gathering and relaying information

or communicating with others) was always encouraged and was generally done autonomously

by members with particular ideas in mind. While PK's forum is used for coming to agreements,

the forum's emphasis was more focused on the gathering of inputs from a wide network of

participants than it was on the practice of a structured decision-making process. In fact, unlike

the 'control, trust and transparency' discussion below, these discussions often didn't come to

shared consensus at all, but rather many tentative agreements (subject to future revision) in

order to try and test a viability of the suggested avenues of possibility.[95] Most of what

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[94] One partial exception to this unwavering commitment was the suggestion by a few members of the orga-team that power consolidation by the group was inevitable, justified, or more efficient. Several members of the organisation, notably including Uwe, strongly pushed back against these suggestions and restated the organisation's commitment to the equality of its members.

[95] Furthermore, as was attested to during the literature review, the tentative agreements which were reached often included many 'stand-asides' and members who chose not to participate in the discussion. Decision-making was fragmentary and based more around what could be acted upon with ease than with the establishment of an explicit 'consensus'.

happened on the forum was not guided towards making decisions as such, but was instead focused on yielding a high variety of possible responses by maintaining a space in which all participants could contribute to a creative problem-solving process. This creativity, I will argue, is an essential component of PK's remarkable durability and adaptability as a group.

7.2.3 Example thread two: Worker oversight and disagreement (control, trust, and transparency)

One contributory factor to the huge financial instability felt during the pandemic, Uwe said in one thread, was that payments had been made to collectivists who appeared to have done little to no work. While details of the situation were omitted from his statement, in the interest of protecting personal information, the situation was presented as being in serious need of addressing. He asked for the collective to offer ways around this to ensure that it did not reoccur. He mentioned that he had looked over the payment requests to ensure the work that was claimed for had been done and mentioned that any member could do this kind of oversight if they chose to. He highlighted the need for a solution to this problem and framed the issue at stake:

> *"do we want to **monitor** the hours that are worked for us, do we want to not do that and always **trust** the honesty of the people, or do we want to uphold **transparency** and generally want to be able to see hours and work?"* (Lübbermann, Premium Collective forum, *Control/trust/transparency* [emphasis added])[96]

He suggested a solution might be having pairs of members check each other's work and that this might offer an easy decentralised solution to the problem, pointing to the fact that a few workers had already started doing this independently. He ended his post by requesting responses, feedback, and alternative suggestions to address the situation. A debate ensued in

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[96] The word 'monitor' here could have been translated to 'control' but it was decided that the former conveyed with greater clarity the meaning being communicated in Uwe's statement.

which several members took diametrically opposed positions on the issue. One member disagreed strongly with Uwe's oversight suggestion, saying it would create a sense of distrust in the organisation. Three notable perspectives were expressed during the discussion and all three appear to rest on mutually incompatible interpretations of the meaning of the words control (or monitoring), trust and transparency. I will reproduce each of their perspectives here, due to its impact on the arguments made during this chapter.

First, Uwe expressed a proposed solution to the issue which had emerged:

> *"A suggestion was to set up so-called tandems, i.e., that 4 eyes are always looking at a task. These eyes could regularly change. Then we would have more control than up until now, but also more transferal of knowledge, more of a failsafe and perhaps a better atmosphere. We would, however, clearly have more working hours to pay, it would be in question whether we can or want to afford that. 4 eyes can also slow down and complicate work, I don't know if I would have the motivation for it. On the other hand, it has been fed back that supervision can be demotivating. I understand that too."* (Lübbermann, Premium Collective forum, *Control/trust/transparency*)

Following this he outlined his reasoning behind this proposition, based on his understanding of the roles that control and transparency should play in the organisation:

> "*My opinion would be: we should have as little supervision as possible, but completely without doesn't work either. And: if so, then everyone may monitor everyone at the drop of a hat. Transparency is a significant requirement to be able to make decisions together at all, and if one cannot see what others have worked on, then we cannot, through lack of information, have a consensus."* (Lübbermann, Premium Collective forum, *Control/trust/transparency*)

This led to Peter, a regular contributor to the forum's discussions, responding with an argument concerning what was at stake in the relationship between transparency and control, relating both concepts to the issue of 'information balance':

> *"Transparency does not enable control but makes control unnecessary. In my view control will then only be necessary because there exists an opportunity for abuse. Such a possibility is necessarily based on an imbalance of information. The question is now:*

can the imbalance of information be rectified through unchanged control, or can control be changed in a way that makes abuse impossible? Control is therefore never a solution, but just a possible consequence of rules being maintained which contain the possibility of abuse." (Peter, Premium Collective forum, *Control/trust/transparency*)

Following this, Rachel intervened with her own interpretation of what was at stake in the discussion, and notably took issue with Uwe's proposed resolution to the issue:

"On the theme of transparency: in modern businesses transparency is often spoken of, work times are tracked visibly for everyone and reports about the progress are regularly filed. Everything is very transparent – on the other hand there is also perfect social control. All colleagues monitor each other and have the 'performance' of others in their mind. Thus, surveillance is in my eyes the old-fashioned, uncool tool, which however makes it clear when one is being monitored, in contrast to transparency, which puts everyone in constant fear of control. Consequently, the transparency has a much bigger and more subversive influence on the workers through the ever-possible invisible controls than the expected visible controls do (Hello Foucault, hello Panopticon).

So, when you "notice" mistakes with the calculations it's clear to everyone that the filed documents can at any time undergo an inspection to an unknown extent." (Rachel, Premium Collective forum, *Control/trust/transparency*)

Rachel also centred her interpretation of control around Uwe personally, saying:

"Currently you [Uwe] *have the account at your disposal, you monitor all hours and transfers, you have a lot of information that others don't have. That means you currently control a lot - who controls you?"* (Rachel, Premium Collective forum, *Control/trust/transparency*)

These statements provoked Uwe to give a hearty defence of his actions, in which he rebutted her characterisation of the situation and his own role within in, particularly responding to the claim that he *"control*[s] *a lot",* saying*:*

"Your [orga-]*team can access exactly as much information as I can, there is no information advantage, that is plainly false. Timesheets generally go to* [Margaret]*, I only see them when I ask. Everybody could do that […] I have also, in this discussion, not blamed anyone, not even implicitly, but only spoken of mistakes […] These were*

simply assumptions on which basis I was criticised. Or has someone said that that's how it is? If yes, that is simply not right. I will gladly be criticised for things that are genuinely real, but then ask first of all, what is the matter at all. Criticism on the basis of assumptions that aren't right, how shall I answer them?" (Lübbermann, Premium Collective forum, *Control/trust/transparency*)

Other members of the collective also jumped to Lübbermann's defence, including Ben who defended Uwe and what he perceived to be a *"lack of control"* in the collective, while seemingly referring to Rachel's behaviour as toxic:

"Negativity is also what I have experienced in recent weeks at Premium, among which belong the current example, that someone refuses to explain their hours, and nevertheless wants to have money. Why would you do that? What's behind it?" (Ben, Premium Collective forum, *Control/trust/transparency*)

He referred to breaches of trust in the collective, ranging *"from toxic behaviour to that which damages the business, which in recent years damage has absolutely come about"*. Regarding control he said,

"I know no single collective or business that is as ridiculously unsupervised as Premium" and *"the necessary trust is not a one-way street here, and for me it is going, mildly put, in the completely wrong direction."* (Ben, Premium Collective forum, *Control/trust/transparency*)

The discussion was far more heated than any other I came across during my research, and although disagreements, criticisms and dissent were very common, they did not usually take the form of divisive language or sides being taken.[97] In that sense, this discussion was an outlier from the norm in the collective, but it demonstrates starkly the readiness for difficult issues to be raised and worked through within the collective. This discussion began with a problem and proposed solution, but through the process of the conversation, punctuated by

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[97] Perhaps some responsibility for the heat of this discussion can be put down to the pressure and unusual circumstances which the Covid lockdowns imposed on people. The oppressive self-policing which was expected from people during the lockdown resonates with the increased self-regulation suggested by Uwe to decrease unnecessary spending. This could have contributed to members like Rachel expressing discomfort in more accusatory language than usual in response to the suggestion.

overlapping disagreement, it also became a discussion concerning the varying understandings of control, transparency, and trust, and created a stage upon which varying organisational, ethical, and social disagreements could be raised.

While the subtly opposing perspectives and interpretations of these ideas had little hope of being satisfactorily resolved during the discussion, perhaps this would be neither possible nor desirable. The varying understandings of transparency and control show that even within an organisation where there is close alignment and agreements on the principles upon which the organisation should be made, the ways these principles relate to each other remains irresolvably divergent. While on one level the discussion centred around a particular problem in need of a resolution, the open and unguided space on the forum allowed for the decision-making process to also function as a context for consent and, more characteristically, dissent to emerge. The lack of a tightly structured decision-making process (coupled with the evident need to find some agreement despite this) produced a space in which perspectives could be articulated, agreed, and disagreed to organically, until one or more members sought to reach agreement through the proposition of a resolution. Eventually such an agreement was made after a proposal was made by Chris:

> *"Proposal for resolution: everyone and anyone that would like to be paid by Premium, has the duty to the collective, when asked, to **plausibly** outline how these hours are being used."* (Chris, Premium Collective forum, *Control/trust/transparency* [emphasis added])

Notably, the agreement took up almost none of the debate and was passed quickly due to no one raising objections to it, despite the widely varying interpretations of the situation members evidently had. Most of the thread was taken up with discussions about how the situation should or should not be approached, what difficult to define terms implied and who, if anyone, had done wrong during the discussion and the events that led to it. In other words, the discussion revolved around disagreements. Coming to an agreed solution in response to the problem

articulated by Uwe took up little of the discussion, and the collective appeared to have no problem establishing one after the participant's disagreements had been expressed. In short, the exchange shows that open discussion spaces such as PK's forum offer something more than directing participants towards coming to agreements together, they offer opportunities for disagreements to be freely expressed, and with them new, unpredictable possibilities to be revealed. With discursive openness comes not only opportunities to express sentiments, concerns, or problems in need of solutions, but also to generate inventive solutions and unexpected responses to the issues raised. I wager that the expression of disagreements constitute an essential component of the creative process of problem-solving collectively and forms a core component of PK's governance approach; both highly democratic, inclusive, and leading to greater adaptability to the unexpected.

7.3 Dissent and cybernetics

Thus far these findings have concerned organisational models which are primarily designed to assist organisations in proper decision-making, whether in the VSM's case a means of better diagnosing and responding to organisational vulnerabilities, or in sociocracy's case the provision of a governance model which affords a comprehensive governance structure to assist in facilitating more democratic ways of coming to agreements. More broadly, discussions about democratic organising often seem to revolve around decision-making mechanisms as though they are equivalent with governance itself. While decision-making is undoubtedly a vital dimension of collective organisational activity, I argue that it does not exhaust it, and consequently I suggest that cybernetics and its relationship with democratic politics has been limited insofar as it has concerned itself primarily or exclusively with decision-making processes, or with governance processes which might lead to the facilitation of better decision-making. To make visible what this exclusive concern for decision-making has left dormant, I will characterise processes of decision-making as *agreement* making strategies and contrast them to the generative possibilities of *disagreement* by drawing on Rancière's unorthodox conception of democracy.[98]

7.3.1 Rancière' relevance to the project

Before developing my reading of Rancière and its relationship with PK's forum, I should first discuss Rancière's politics itself. In order to understand his idiosyncratic conception of democracy I begin instead with his conception of *"the two opposed logics of politics and police"* the first being understood as *"the government of everyone and anyone"* and the latter being

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[98] There are a variety of writers in the area of democratic theory who are critical of Rancière and who make alternative proposals of how to conceive of dissent, politics, and similar concepts (Mouffe, Galloway and Tiqqun are a few writers who consider themes of subversion and dissent from differing angles). I will not, however, discuss these works in detail here, so as not to divert too much time from the project's central themes. The relevance of the project's use of Rancière's notion of dissent has been contextualised within this chapter and elsewhere (see section 2.3.4 and 2.3.5).

"*the natural government of social competences*" (Rancière, 2014, p55). This distinction is the basic split upon which his understanding of politics is based. To be more specific, policing, for Rancière, is understood as:

> "*an order of bodies that defines the allocation of ways of doing, ways of being, and ways of saying, and sees that those bodies are assigned by name to a particular place and task; it is an order of the visible and the sayable that sees that a particular activity is visible and another is not, that this speech is understood as discourse and another as noise.*" (Rancière, 1999, p29)

In this sense, policing for Rancière can be summarised as what is ordinarily called politics, if politics is understood as ways of distinguishing who has the right to do what and under what circumstances:

> "*Politics is generally seen as the set of procedures whereby the aggregation and consent of collectivities is achieved, the organization of powers, the distribution of places and roles, and the systems for legitimizing this distribution. I propose to give this system of distribution and legitimization another name. I propose to call it the police.*" (Rancière, 1999, p28)[99]

Practices, processes, and operations which order social bodies, distinguish what goes where and under which circumstances, is designated as the *logic of policing* by Rancière. Consequently, at a basic level, all forms of social organisation are forms of policing, or are at least governed through forms of policing.[100] Politics is understood as that which radically opposes this predominating logic of policing with that which opposes all such logics of distinction. Politics, Rancière claims, is *"antagonistic to policing"* and is understood to be:

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[99] Rancière's practice of re-framing conventional understandings and 'giving them another name' is quite reminiscent of PK's above discussed re-framing of the conventional economy as the 'abnormal economy' (see section 6.4.1), as well as Swann's emphasis on renaming things as being key to clear articulations of cybernetics.

[100] The unanimity of policing should begin to indicate already that for Rancière 'policing' is not altogether pathologized (else all forms of social organising would be dismissed on the same grounds of constituting policing), but it does remain antagonistic with politics and requires questioning, challenging, and undermining constantly via the latter.

> "*Whatever breaks with the tangible configuration whereby parties and parts or lack of them are defined by a presupposition that, by definition, has no place in that configuration - that of the part of those who have no part. This break is manifest in a series of actions that reconfigure the space where parties, parts, or lack of parts have been defined. Political activity is whatever shifts a body from the place assigned to it or changes a place's destination. It makes visible what had no business being seen, and makes heard a discourse where once there was only place for noise*" (Rancière, 1999, p29-30)

Policing, therefore, is understood as the processes by which 'parts' which make up a social body are *counted* and distinguished, whereas politics is the radically oppositional logic which calls this ordering of parts into question and shows how they might be counted otherwise. This leads to understanding politics as that which emerges when *"the natural order of domination is interrupted by the institution of a part of those who have no part"* (Rancière, 1999, p11). The existence of a social order, which is to say police order, is predicated on a process of "*counting of the community's parts*" (Rancière, 1999, p9) and asserting what is considered a part of the social body, as well as determining what is excluded from it.

Politics is therefore understood as an interruption of any logic of policing, which is to say any logic of governance based on principles of who does and does not have the right to rule over anyone else. It is this undermining of the logics of distinction that leads to politics being based on a radical logic of equality, understood as,

> "*simply the equality of anyone at all with anyone else: in other words, in the final analysis, the absence of arkhe, the sheer contingency of any social order.*" (Rancière, 1999, p15)

With these terms briefly introduced, we can return to the question of democracy. Democracy for Rancière is a form of governance based on the radical equality of everyone with everyone, and therefore of no one over anyone else. This leads to politics, for Rancière, possessing a

manifestly anarchic tone. This notion of democracy is not simply a form of governance, however, nor can it be identified with some set of social practices:

> "*The term democracy, then, does not strictly designate either a form of society or a form of government. "Democratic society" is never anything but an imaginary portrayal designed to support this or that principle of good government. Societies, today as yesterday, are organised by the play of oligarchies. There is, strictly speaking, no such thing as a democratic government. Government is always exercised by the minority over the majority.*" (Rancière, 2014, p52)

Instead, he describes democracy as a 'scandal':

> "*The scandal of democracy, and the drawing of lots which is its essence, is to reveal that this title can be nothing but the absence of title, that the government of societies cannot but rest in the last resort on its own contingency. There are people who govern because they are the eldest, the highest-born, the richest, or the most learned. There are models of government and practices of authority based on this or that distribution of places and capabilities. Such is the logic that I've proposed to be thought under the name of "police".*" (Rancière, 2014, p47)

Consensus, which has to a significant extent been implicitly identified with democracy in this research until this juncture, is seen as radically opposed to democracy for Rancière. It is *dissensus* which is aligned with democracy and the logic of equality here, whereas consensus is identified with the logic of police upon which divisions, partitions and exclusions are justified. Tanke makes this reaffirmation of dissensus explicit:

> "*Politics opposes consensus by means of dissensus. Dissensus, whether the straightforward political variety or the type employed by art, is the means by which the sensible is deprived of its self-evidence, punctuated, and subjected to dispute. Dissensus is the process of politics itself in that it is the activity of countering the police distribution of the sensible with the egalitarian supplement.*" (Tanke, 2011, p61)

Consent and consensus are here identified with conformity and compliance, negatively inflected, whereas dissent and dissensus are characterised by their radically egalitarian

implications which stand in opposition with whatever status quo predominates.[101] Dissent is expressed through the articulation of a *disagreement*, in which a statement is made which cannot be accounted for by the existing, consented to, order. The incompatibility between the two opposing statements produces a misunderstanding in which the speakers fail to understand each other's statements as making sense or being 'sensible'. In its extreme form, Rancière says:

> "*X cannot see the common object Y is presenting because X cannot comprehend that the sounds uttered by Y form words and chains of words similar to X's own…. The structures proper to disagreement are those in which discussion of an argument comes down to a dispute over the object of the discussion and over the capacity of those who are making an object of it.*" (Rancière, 1999, preface xii)

Dissent always results in disagreement because the expression of politics involves the articulation of a position which is excluded by the status quo police order and is therefore not understood to be intelligible by that order. With this unconventional and heterodox vocabulary in mind we can consider how it relates to the conception of democratic cybernetics so far elaborated in this research. I argue that Rancière's work has an essential role to play in the development of a democratic cybernetics, and that accounting for his idiosyncratic

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[101] I should here draw attention to a certain ambiguity between consensus as Rancière characterises it, as epitomising policing and conformity, and the consensus decision-making process itself, which allows for and encourages the expression of dissent. Lorey argues:

> "*A distinction must be made between Rancière's concept of policing consensus and the consensus procedure that was used to reach decisions in many assemblies of the occupation movements. As it is specifically not based on sameness and unanimity, this kind of consensus procedure installs 'dissent at the heart without it crystallizing into blocs and identities'. In contrast to this, a policing consensus makes politics, through which democracy is practised in dissent, disappear. Democracy – in the sense it is discussed here – is not compatible with this policing consensus, because it arises in dispute and in the debates, in which this consensus is broken open and a possibility space is opened up.*" (Lorey, 2014, p14-15)

Pickard also draws attention to the various ways in which dissent is registered within consensus process:

> "*The Seattle IMC's meetings allow for several levels of consensus and ways to register dissent without derailing the process, including ''reservations'' (have concerns), ''non-support'' or a state of ''non-disagreement'' (the person sees no need for the decision), or ''stand aside'' (it may be a mistake but a person can live with it). Making a ''block'' indicates that the person feels the decision goes against fundamental IMC principles.*"
> (Pickard, 2006, p11-12)

understanding of politics is vital for cybernetics to avoid tending towards a continuous return to technocracy.

7.3.2 Policing and cybernetics

I contend that there is a strong relationship between cybernetics and policing, to the extent that it seems to border on synonymity. What prevents me from claiming the latter, in fact, mostly comes down to the discursive understanding of cybernetics I have utilised throughout this research, leading me to fall short of defining it too definitively in a single and uniform way. It should immediately be emphasised that I am using the term 'policing' in a specific theoretical sense in this context, and that the term for Rancière is *not* synonymous with *"the truncheon blows of the forces of law and order and the inquisitions of the secret police"* but specifically with the *"more general order that arranges that tangible reality in which bodies are distributed in community"* (Rancière, 1999, p28). For Rancière, the term is *"neutral, "non-pejorative"* and is neither identified with the police nor with *"the state apparatus"* (Rancière, 1999, p29). It bears repeating again that any distribution of bodies, any way of 'ordering' a social body, such as a consensus process or sociocratic consent or whatever else are all forms of 'policing' in this sense. In fact, my interest in cybernetics stems precisely from an interest in conceptualising and designing forms of organisation in which the police, as much as priesthoods and technocrats, are rendered redundant. Despite this, the resonances between cybernetics and policing in this strictly Rancièrian sense are obvious.[102]

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[102] This identification between policing and cybernetics will rightly afford democratic practitioners and theorists alike with a sense of suspicion and scepticism towards the latter. I will emphasise several times throughout this chapter the specific meaning that Rancière assigns to 'policing' and its distinction from the police, traditionally understood. While cybernetics provides a means of thinking about 'good policing' in a strictly Rancièrian sense, I also emphasise the riskiness and ethical ambivalence of cybernetics and policing alike. It is this ambivalence, in fact, which necessitates that cybernetics is thought of in a strictly democratic sense and prioritises the democratic purposes towards which it can be aimed, rather than the mere criteria of 'efficiency' of whatever goal towards which it is directed. Cybernetics, as I understand it, is a risky and dangerous practice and does not procure 'good governance' irrespective of the goals towards which it is set (as was discussed during Chapter 1).

Cybernetics is commonly referred to as the science of control, and policing is that which determines what goes where and under what circumstances, which is nothing if not control, broadly understood. Cybernetics has to do with the drawing of distinctions to make sense of complexity and complex systems and is concerned with utilising these distinctions and forms of partition to understand how a system can be (self-)regulated, (self-)controlled and (self-)organised. To be more exact, cybernetics closeness with policing emerges specifically from its application to human organisations and the question of how they should best be designed, structured and, for Beer, effectively organised. When cybernetics is applied to any organisational domain made up of people, it asks how best to make *sense* of the organisation through a process of distinction, which leads to the production of a model of that system. This modelling of the sensible can be characterised as what Rancière calls *"the distribution of the sensible"* and it is this distribution which policing manifests in organisational terms. The reproduction of the distribution of distinctions is the concern of the police, leading me to argue that as far as (organisational) cybernetics is put into practice, it is expressed through policing. Whenever it is applied to questions of human organisations, cybernetics asks how it is that those organisations should best be policed.

While I contend that there is a strong relationship between organisational cybernetics and policing as it is understood by Rancière, I fall short of claiming that cybernetic models like the VSM and Sociocracy are simply sites of policing, since it is plausible that they open and facilitate opportunities for dissent to emerge. However, I do claim that these models are concerned more with the facilitation of decision-making, and therefore agreement, than with dissent. Despite the strong relationship these cybernetic models have with modes of policing, they nevertheless retain the possibility of politics re-emerging within and through them. Systems which aim to *"steer political thought back in the proper realisation of the arcke of politics"* still become new sites for politics to re-emerge (Bosteels, 2014, p81). Political

philosophies which aim to re-establish consensus, Bosteels says of Rancière, always fail to eliminate politics as new forms of reappropriation of their categories are used as ways of enabling politicisation (Bosteels, 2014).

It should again be emphasised that despite the ineliminable status of oligarchy in governance from a Rancièrian perspective (perhaps even qualifying it as an *"invariant"* characteristic of human organisations) oligarchies should not be concerned as all being equally pathological or oppressive. This is a vital consideration in the above stated identification of cybernetics with policing. While oligarchy can be thought of as the default state of things from a Rancièrian perspective, there remain *'better and worse'* forms of policing which *"can give democracy more or less room"* (Chambers, 2014, p10). It is with this improvement of the state of policing in mind that I propose a democratic cybernetics as an aide.[103] If, as Beer argued, cybernetics can be understood as *"the science of effective organisation"* and, as I claim, cybernetics is near synonymous with Rancière's conception of policing, then perhaps the former is best understood as the means by which forms of policing can be improved (Beer, 1993, p13).

7.3.3 Disagreement and PK

Cybernetics has to do with the making of distinctions and divisions to gain a form of control over a system (in democratic contexts this is understood to be shared self-control). In this way, cybernetics is almost synonymous with policing in a Rancièrian sense. I even suggest a definition of cybernetics as *the science of policing*. This leads me to ask: can cybernetics be used to produce 'good policing' ('good' here roughly meaning policing which facilitates the expression of productive dissensus)?[104] PK's preoccupation with encouraging and facilitating

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[103] Rancière says: *"The police can procure all sorts of good, and one kind of police may be infinitely preferable to another."* (Rancière, 1999, p31)

[104] As was just alluded to, 'good policing' here can precisely be understood as forms of ordering a social body which exclude and render obsolete 'traditional' forms of policing, as well as forms of technocratic rule, priesthoods and the like. Highly democratic forms of organisation, such as those exemplified by PK are examples of the kind of 'good policing' I am trying to get at with this meeting between cybernetics and Rancièrian policing.

disagreement leads me to suggest that their approach to governance might be proposed as an instance of 'good policing' in the above stated sense. Specifically, it facilitates an organisational space in which dissent and disagreement regarding the existent ways in which the organisation is governed can be expressed and are positively encouraged.[105] This dissent, notably, has one significant exception (in both Rancière's theory and PK's practice): equality itself. PK finds itself aligned with this single principle which is understood as standing beyond debate (although its exact implications and interpretation are certainly subject to disagreement). In one post in which Uwe sums up the collective's commitment to equality he says it is "*a word, from which everything else can be derived*" and goes on to elaborate:

> "*The two most important basic assumptions from this are:*
>
> *1. The power to make decisions about resources and people should not lay primarily in the hands of those who have something (shares in a company or a position in it), but in the hands of the affected people. If we **start from equality**, it makes no sense that some people can decide over others just because they have something. Therefore, we invite all those affected to participate equally in business decisions*
>
> *2. The extraction of jointly acquired resources or profits should also not lay primarily in the hands of those who have something (share in a company or a position in it) but in the hands of the affected people. If we **start from equality**, it makes no sense, that some people may withdraw profits practically unrestricted from the shared work of many people, while others simply don't have enough resources to live. Thus, we have*

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[105] Although PK's board was the primary instance of dissent being facilitated within my cases study research, it was not the only case of it I found during my project. When I was considering various possible case study organisations early in my project, Chapel Arts Studio, a democratically run art studio who have facilitated projects around dissent, seemed to reflect some of the same attitudes exemplified by Lübbermann and PK's practices. David Dixon, the group's founder, said:

> "*I aspired to having the opportunity of creating an arts network that I wanted to be a part of; the kind of thing I'd want to inhabit. Build your own, so to speak. But you can't do that from the top and lead it, you have to do that from the inside and be part of it and allow it to grow around you... and you'll all grow together. If you try to run it and manage it too much, then it becomes brittle and top-down and I'd like to think that's not really the way we work. Obviously, we have plans, and we have to lead those but as much as humanly possible we try to make it as an open-ended non-linear type of organisation.*" (CAS, 2019)

In relation to enabling dissent in the organisation:

> "*It's just giving people permission to follow their nose really, and that way I think it makes the organisation stronger, more flexible, less rigid and more adaptable to change.*" (CAS, 2019)

our standard wage model, that obviously (see 1.) is decided together.” (Lübbermann, Premium Collective forum, *Realignment Premium* [emphasis added])

Uwe also emphasises equality's value both as an ethical principle and as practically advantageous, stating that the collective aims to:

“show and prove that with [equality] *one can not only run a stable business but that it functions better, in the sense of the absence of problems, and also in the sense of resilience to crisis, so that actually almost all businesses can and should become more equal.”* (Lübbermann, Premium Collective forum, *Realignment Premium*)

Anke Turner, who writes in Lübbermann's book concerning the collective, further elaborates PK's assumption of equality:

“*Many companies only consider their stakeholders insofar as they are constantly weighing up their negotiating power. Who do they have to involve in their decisions because their influence is great, and who can they leave behind, because their influence is small. That's what makes Premium different. The Collective involves everyone, no matter how influential they are, because it assumes that all stakeholders are equally worthy. While other companies only involve their stakeholders where they can appear useful or they do so within the framework of legal regulations the operating system of Premium is designed in such a way that there is no possibility at all not to include the co-affected.”* (quoted in Lübbermann, 2021, p109)

Equality is understood in PK as *the* fundamental assumption of the organisation. It is, on the one hand, unquestionable and immovable, but on the other, it is purposefully left underspecified; therefore, remaining the subject of continuous contestation and re-evaluation, harking back to the discussion of feedback in the last chapter (see section 6.8.1).

This chapter will develop the relationship between dissensual governance and PK's practices by considering how the notions of agreement and disagreement relate to different ways of understanding self-governance, the former being identified with the dominant framing of governance as being to do with the development of *decision-making processes,* while the latter (which PK specialises in) is identified with the facilitation of *disagreement enabling spaces*.

The facilitation of dissent leads, I argue, to a conception of democratic organisational cybernetics which is likely to produce "*better*" forms of policing.[106] I further wager that the facilitation of dissent has been an essential component of PK's ability to not only survive the Covid pandemic but to emerge from it stronger, and ready to better respond to further disturbances in the future.

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[106] Which is to say, those which are less likely to devolve into priesthoods of experts who impose their organisational perspectives on those with an ultimately equal right to rule.

7.4 Dis/agreement: the facilitation of processes of agreement and spaces of disagreement

During the previous chapter I discussed CK and PK's approach to providing continuous communicative feedback within their organisation, with the former doing so using processes of reflection and retrospective, while the latter utilised the space afforded by its forum. Here, I further elaborate this emphasis on the use of *spaces* on the one hand and *processes* on the other and associate each one with disagreement and agreement-making respectively. These are important findings in relation to this research project because, first, I argue that cybernetics can be impactful in the design of both processes of agreement and spaces for the expression of disagreements, and second, because prior analyses of the relationship between democracy and cybernetics have, to my knowledge, entirely neglected the latter.

7.4.1 Agreement as facilitated by process

We understand *agreement* here to be established within organisations through forms of decision-making *process*. While there are many forms of decision-making process used by various forms of democratic organisation in differing contexts, the two key examples I have considered during this research are consensus and consent, the distinction between the two being somewhat ambiguous and subject to the interpretations of the groups who use them. On the forum Uwe outlines PK's consensus process as such:

> *"The sequence of events is typically that various opinions and viewpoints about a particular topic are collected, in the duration of two weeks according to experience, until someone proposes a resolution and writes about it, which one can then comment on, but doesn't have to. To not comment is therefore considered agreement. So that the possibility is there to express one's opinion, though, you must wait a couple of days. If there is no veto, the proposed resolution becomes a resolution, but can be put into question again at any time."* (Lübbermann, Premium Collective forum, *Realignment Premium*)

Whatever process is developed or determined by a group, decision-making, understood as means by which groups come to agreements, is characterised by a *process* of coming to decisions. Decision-making processes such as these may be formally structured or remain *ad hoc* (sociocracy focuses strongly on rigorous process, whereas PK's processes are more fluid and subject to improvised adjustment). In either case decision-making is characterised as a process.[107] Such processes take democratic groups from a state of indecision to one of decision by working through a myriad of possibilities until an agreement can be made. Review processes and processes of critical self-reflection (see section 6.8) also guide organisers towards agreements. Many of the components which make up sociocracy are best understood as processes by which agreements can be made within an organisation.

This emphasis on process and agreement making was most clearly encapsulated during my discussion with Jack about the dis/agreement distinction which I was considering during our later interviews together. After working through the implications of the distinction, and after I introduced the association between dissent and spaces which enable them (discussed next), Jack distilled the relationship between decision-making processes and agreement, and CK's tendency towards emphasising decision-making over the unguided discussions which characterise PK's dissensual way of working together:

> "*I guess it* [dissent] *is all the other stuff that isn't decision-making actually. If you take decision-making as the event where consensus is found. It's the bits that make life different for everyone…*
> *It's probably somewhere where we've fallen down a little bit in CK.… we actually have very few fluid, non-directed communication points. We got rid of our Slack, our Signal is probably our only liminal space where random stuff happens and we just chat, or little moments in the meetings. We used to: on Friday mornings we started doing just long check-ins where we'd just chat about stuff. And that feels weird to us because it's*

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[107] Voting systems and heuristic processes such as a showing of hands are also understood here as examples of decision-making process.

not really our practice anymore, but we found it very liberating in a strange way… Where we've moved all our chat is to Notion, all our commentary is specifically about a thing, and trying to move towards a thing, solve a card, solve a ticket, talk about a project that's going on... and we try to tease out opinions but it's always towards something… I think the team retreat we just had was one of the biggest moments to not be actively decision-making all the time, and even then, we had morning and evening exercises. And I noticed that our instinct was definitely to try to make a decision." (Jack, interview 1)

Jack's comments show how a tendency to constantly be decision-making, finding agreements and solutions, may signify strong organisations progress and organisational coherence, but may also be indicative of a kind of restricted interpersonal interaction in which the free flow of ideas is sacrificed in favour of the clarity afforded by processes directed towards specified ends. This directed mode of collaboration may be particularly stifling when moving into new and uncharted territories in which creative, out of the box thinking is required to respond adaptively and avoid falling into conventional thinking, devoid of the specific contextual circumstances in which the group finds itself.

7.4.2 Disagreement as facilitated by spaces

With this characterisation of agreement-as-process in mind, how might disagreement be characterised in contrast? If processes characterise the means by which high variety problems are turned into agreements, how should the means by which expressions of disagreement are facilitated within democratic organisations be characterised?

First, the facilitation of disagreement cannot, unlike agreements, be characterised by a *process* of expressing disagreement. Such a process would undermine the dissent it is supposed to enable by constraining how it can be expressed. Such a suggestion would be to misunderstand the disruptive potential of dissent and its purpose as a means of undermining or rearranging the consented to order of an organisation. A complaints process, to take one example, would

function to take disagreements and process them in such a way as to determine their legitimacy and assess whether they should be 'counted' as legitimate complaints. The establishment of any process for enabling the expression of dissent can best be understood as a means of domesticating it and removing its defining character as a means by which consensuses can be *recounted* differently. Dissent would be better exemplified by the members of a group finding a way to undermine, disengage from or repurpose a consented to practice than to follow it as intended. How then should the process of dissent be understood in organisational terms? In *Disagreement* Rancière refers to the process of 'staging' equality to delineate how politics emerges by invoking the example of socialist and feminist Jeanne Deroin. The metaphor of staging appears frequently in Rancière's work within a political as well as theatrical and aesthetic context:

> "*Jeanne Deroin does this in exemplary fashion when, in 1849, she presents herself as a candidate for a legislative election in which she cannot run. In other words, she demonstrates the contradiction within a universal suffrage that excludes her sex from any such universality. She reveals herself and she reveals the subject "women" as necessarily included in the sovereign French people enjoying universal suffrage and the equality of all before the law yet being at the same time radically excluded. This demonstration is not a simple denunciation of an inconsistency or a lie regarding the universal. It is also the* **staging** *of the very contradiction between police logic and political logic which is at the heart of the republican definition of community.*"
> (Rancière, 1999, p41) [emphasis added]

This characterisation of dissent being *staged* draws attention to the fact that dissent always takes place within *a space*, within a context of policing which is arranged in one way and is capable of being arranged otherwise through the performative act of dissent. This leads me to consider politics not as the outcome of process, but as denoting a type of expression which takes place *within a space*. Presented in this way, I ask whether stages upon which dissent is performed can be organisationally facilitated and maintained by identifying conditions which

are conducive with its emergence. Can a space in which politics is allowed to emerge be created, and what are the conditions of that stage facilitating the expression of dissent? Vitally, performance on such a stage would not be determined by one's status as a performer, a narrator, or any other established theatrical role. The expression of dissent is proved through its lack of predefinition, its openness to anyone and everyone. This is what makes its embodiment in process impossible, and what makes the governance (better understood as facilitation) of such a stage difficult, if not impossible to discuss without tying oneself in knots (discussed further during section 7.7). It is also what makes PK's radical inclusion of all 'stakeholders' in the organisation to participate such a powerful illustration of the facilitation of dissent.

This leads me to claim that this understanding of dissent as taking place in a space, or upon a stage, conforms closely with the way in which PK's forum functions, making it the most impressive expression of democratic organising I came across during this project. The openness of the forum provides an environment in which (1) any member can speak on any topic at any time, unconstrained by the time and scheduling constraints which face-to-face meetings inevitably run into. More singular than this is PK's (2) openness to almost anyone joining the forum who is in some minimal way connected to it (see section 3.7.2) including active workers, consumers, suppliers, distributors or even researchers like me. These two characteristics mean that even I, with my only connection to the collective being of academic interest, was invited to participate in or initiate any thread of my choosing (as well as explore the wealth of interactions within the space). The PK board constitutes an exemplary stage for the facilitation of political dissensus which allows for the expression of disagreement, which has benefited PK as an organisation and its participants as members of the collective.

7.5 Trust and productive dissent

We have discussed the distinctions between consensus and dissensus as they operate in this thesis, as well as the identification of the latter with its facilitation within spaces. PK's forum exemplifies a context in which dissent is facilitated by the techniques of governance that the collective has developed, and importantly, sustained over several decades. This begs the question of how PK's (self-)governance operates and how the space in which they form their disagreements is governed and sustained. While an extensive analysis of PK's governance approach exceeds the confines of this research, I will here discuss what stands out as the most salient feature of PK's approach to sustaining their collective and forum. Simply put, this factor can be characterised as the creation of a culture of unconditional trust and mutual care, or, to put it in the terms used by Walker (discussed below), a shared feeling of *"identity with the whole"* (Walker, interview 7). One of the explicitly present features of PK's organisational approach is their constant reinforcement of social bonds through an active and responsive mentality of care and trust for the members of the collective. The culture and practices of trust are codified into PK's policies, or 'modules' as they call them, and are also expressed improvisationally when unusual needs become evident among their members. Sometimes these take the form of making exceptions to policies in order not to "*let anyone down"* and sometimes lead to new policies being formed to prevent the repetition of turbulence among their network of partners and collaborators (Lübbermann, Premium Collective forum, *Realignment Premium*). This commitment to reinforcing social bonds is evidenced constantly on the forum, both formally and informally. Here I draw attention to a few of the formal policies which demonstrate PK's mentality of reinforcing and demonstrating trust and mutual care.

7.5.1 Trust and mutual care in PK's organisational structure

- Module 32: perhaps the most obvious example of a policy practice which aims to reinforce and produce trust within the collective is the consensus decision-making module, which states:

> *"Since the task of a business is seen as meeting the needs of customers in cooperation with, and not to burden, individual participants, it is only logical to get all participants on board when making decisions. Naturally, the participation is voluntary. So, it is free for everyone, be they supplier, colleague, merchant, or customer, to take part in every decision, and their knowledge as well as their needs, ideas and wishes be brought in.*
> *This is possible because the decision-making occurs with the help of democratic consensus. It is then discussed with the participants for a time until no one brings forward any fundamental objections in the form of a veto. That means, that all objections and concerns must be fully considered and discussed, until everyone can live with a decision, without explicitly having to agree."*
> (Premium Collective, Operating System, Module 32)

Additionally, as was mentioned earlier, agreements made by the group often include various stand-asides, whether explicitly in the form of articulated disagreements or implicitly from not posting to the discussion thread.

- Module 23 states that all agreements which are made between partners (all without the use of contracts), are flexible and renegotiation is considered normal:

> *"This module is about an agreement always being able to be changed and adjusted according to the situation of the participants. People who want to cooperate with one another don't need any comprehensive contracts with notice periods."* (Premium Collective, Operating System, Module 23)

- PK commit to paying invoices without any delay (Module 10) to prevent putting pressure on partners. On the other hand, Module 12 states that if payments are not immediately made by partners no interest is added. The module states "*the levying of*

interest is fundamentally inappropriate, since the income generated in this way is not based on performance." (Premium Collective, Operating System, Module 12)

- Module 16 concerns the use of "pull" instead of "push" advertising. PK try to retain trust with their customers by not imposing excessive advertising on them, preferring to 'pull' new customers in through their ethical practices, good service, and culture of trust rather than 'push' them towards buying products via advertising and aggressive marketing. No one, Michael said when I spoke with him, wants advertising shoved in their faces, so PK make efforts to avoid it. Module 41 is the flip side of this commitment, which concerns communication about PK's practices with those who want to receive that information. This concerns *"information about ways of working, products and the business being actively spread. Without imposing the information on other people."* (Premium Collective, Operating System, Module 41). This active communication includes giving talks and lectures about PK's practices and inviting researchers like me to engage in projects with the collective.

- Module 39 concerns production errors and their transparent communication:

  > *"There is no production in which everything goes right 100% of the time. Therefore, we should deal with mistakes openly. Only when mistakes are known can improvements be considered, in order to eliminate the causes of mistakes. Thus, it should be considered at what scale mistakes in production should be publicly made known, to also give people outside of the collective the possibility to bring in their knowledge and find solutions."* (Premium Collective, Operating System, Module 39)

- Finally, Module 34, which was added to the OS by Auguste Burgers & Soulfood in their own implementation of the OS, includes a module regarding alcoholism and its prevention via the provision of 1 cent per bottle to go to alcohol prevention charities

(more than 10% of revenue). They also do not communicate this provision on the bottles because:

> *we don't want to signal to addicts that it's ok to consume our beer as an addictive substance. Despite this, we speak about it to encourage other manufacturers of alcohol containing drinks to support help and prevention projects with part of their income."* (Premium Collective, Operating System, Module 34)

This came because of the organisation dealing with members of the organisation as well as consumers suffering from alcoholism.

These modules exemplify some of the ways that PK and other organisations implementing their OS use their policies to develop and retain trust with their partners.[108] Vitally, this extension of trust and mutual care, as has been shown in the above examples, extends beyond the participants in the collective themselves to the suppliers, customers, the environment, and any others who are in any way affected by PK's work. It is in this sense that PK's culture of equality, trust and care should be seen for its radicality in both its practice and its consequences. The generosity which characterises PK's work is recognised and reciprocated by those it is shared with, and it is this, its members claim, that has led to PK finding support and solidarity during their greatest times of need.

7.5.2 The Lübbermann-Move

This organisational approach was to a large extent pioneered by Uwe himself, which is evidenced by his recently published book discussing his practices both within and prior to their manifestation in PK (Lübbermann, 2021). There, Uwe discusses his approach to governance and coordination in depth, which relies to a considerable extent on providing the space for others to use their own intelligence and understanding:

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[108] Other examples were referred to earlier, such as the 'anti-quantity discount' policy (see section 4.3.1). There are many additional examples of such policies which have not been included here.

"It is not at all necessary to find every solution to a dilemma yourself. The others are also clever. Often it is enough to free up the space for a good solution." (Lübbermann, 2021, p61)

The other vital component of this collaborative form of governance, according to Uwe's philosophy, centres around trust:

"I tell you what I want and ask you what you want, and we coordinate our behaviour with each other. I often offer advanced payment; with this I build up trust. With this trust, transparency, and mutual agreement we can achieve almost anything. My brother calls that the Lübbermann-Move: establish trust, solve problems, celebrate success together.
I would have to lie though if I had to claim that the necessary trust always came easily to me, as it is also bound with a risk, and as I mentioned, I am a very careful person."
(Lübbermann, 2021, p44-45)

Lübbermann's approach to leadership resonates closely with the non-coercive governance practices discussed by Clastres in *Society Against the State* in which he (discussing work by R. Lowie) identifies three attributes of the *"titular chief":*

"*(1) the chief is a "peacemaker"; he is the group's moderating agency (...)*

(2) He must be generous with his possessions, and cannot allow himself, without betraying his office, to reject the incessant demands of those under his "administration"

(3) only a good orator can become chief." (Clastres, 2020, p29)

The *"human centred"* approach to organising embodied in PK, while emerging quite directly from Lübbermann's philosophy and practice, has been fundamentally shaped and developed by the collective. The group's self-governance has been vital to it, but the group's approach and philosophy is better understood as being *facilitated* by Uwe rather than crafted by him personally. This returns me to themes discussed during my initial findings chapter regarding Brown's work on facilitation and the easing of governance processes. Despite these informative overlaps, what is at stake here is the effects this approach to governance has had on the collective's culture of mutual trust and support, and the consequential atmosphere of

safety and openness which has created a space in which participants can dissent openly and without fear of reprisals from their fellow collectivists, or from Uwe. Perhaps the best 'proof' of this culture of care and trust which PK embodies is the fact that, as Michael reminded me more than once, despite never using contracts during their over two decades of work they have never been drawn into any legal disputes and have always successfully resolved tensions and conflicts through discussion and compromise.[109]

7.5.3 Productive and unproductive disagreements

We have so far discussed disagreement as a productive force within organisations, which enables new organisational arrangements to be discussed and proposed by the group, and which provide an alternative understanding of the kinds of organisational contexts cybernetics might contribute to the facilitation and development of. However, consideration should be made for the limits of this productive interpretation of dissent by considering the circumstances in which it acts not as a way of discovering new possibilities but on the contrary, acts as a means of shutting down the expression of alternative possibilities and creative solutions. When I discussed with Walker my intended consideration of the notion of dissent as an alternative interpretation of democratic politics, he was supportive and interested in the idea, but also expressed concerns about the ways in which dissent could be used as a way of slowing down and disrupting decision-making processes:

> "*One of the early meetings at Suma, when it was everybody discussing everything, there was a long agenda and after about an hour we got through to item 6. And item 6 came up and one of the members, who happened to be female, said "there's no point in*

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[109] This organisational prioritisation of trust contributed to the need for (and high tensions involved in) the 'control, trust & transparency" discussion above, due to the extraordinary conditions the pandemic had in Germany and their impact on industries which depend on public venues for their viability. On the one hand this can be seen as being a result of (1) there being no oversight from the collective regarding what money was claimed, while on the other (2) contributing to the tumultuousness of the discussion which followed, since the idea of oversight was so foreign to the practices PK are accustomed to.

discussing this let's move on to seven." And everybody said, "well, wait wait wait this is on the agenda, we should discuss it" and she said, "there's absolutely no point because I'm never ever going to agree to this, I don't care what anybody says, I'm not going to agree to this, and as we work on consensus, we can never agree, so we can just forget it move on to the next one."

And there was this general sort of uncomfortableness... I mean, that is giving the tiny minority complete power to stop things happening. And it is one of the things about co-ops that I found: if you want things to change [and have] *lots of new ideas and try things and innovate it's very easy for people to stop that happening. You can always say "well we haven't got the time", "we haven't got the money", "this is a crazy idea". There's a million ways of stopping things happening."* (Walker, interview 7)

This example, far from being indicative of the dangers of dissent, emphasises the ease with which both dissent and consent can be shut down and prevented from being expressed when people either misunderstand democratic practice or otherwise use it to shut discussion down. As we discussed the issue further, and the context in which I was utilising the term, Walker considered the contexts in which dissent could be a productive force within organisations, and a way of opening possibilities rather than shutting them down:

"*It very much depends on the people. I mean, most people, particularly in a coop, there's this sense that holding it all together is really crucial. You know the sort of system cohesion stuff that Stafford talks about a lot. But then a lot of people get, you know, "bees in their bonnet" which they're going to pursue at all costs.*

There's this whole thing about, I think for me, it's about the **identity with the whole**. *You need to feel that you're* **a part of the group, a part of the larger organisation** *and then if you find you disagree with something really strongly, and you say "look I think there's something we really need to discuss" people know that you're not just making trouble. I mean, I've worked with people who just love being in a complete minority, and everyone is saying "this is just totally stupid" and they just really thrive on that."*
(Walker, interview 7 [emphasis added])

This emphasis on trust as *"identity with the whole"* seems central to understanding PK's successful development of a culture in which dissent can be freely and productively expressed.

I contend that this dissensual culture contributed positively to the problem-solving skills of the group and were in fact imperative to PK's ability to adaptively respond to both internal tensions, like the above discussed disputes, as well as external threats, like the potentially catastrophic impact of Covid. The collective's ability to prioritise the needs and requirements of the whole led them to frame the collective not so much as a cola producing company but as a collective of people working together in radical ways (see section 7.2.2), opening the opportunity to respond to the crisis by fundamentally changing the work that the group was doing. Furthermore, this change did not require unanimity of the group, in fact it was based around a diversity of approaches which encouraged the diversification of the collective's work into a wider variety of areas.

Walker's reference to *"feeling a part"* of the group is especially poignant here in relation to Rancière's work, particularly the latter's concept of *"the part of those who have no part"* and its intimate connection to his understanding of politics as dissent (Rancière, 1999, p65). Walker's comments highlight a fascinating paradox implied by the examination of dissensus discussed here. Namely, for members of an organisation to freely express the senses in which inequalities within the organisation remain - senses in which some remain *apart* from the organisation - they must be treated with the presumption that they are equal within that organisation, which is to say, as if they are *a part* of it.

7.6 Cybernetics, technology, and dissent

Having discussed the vital importance of trust and feeling *"a part"* of organisations in the maintenance of *spaces of dissent*, I now return to the question of the role of cybernetics in the facilitation and governance of these spaces. To do this, I consider the technological infrastructure which enabled PK's communications (the forum), and a particular discussion they had regarding the need to improve this infrastructure. This discussion will reveal both the opportunities and limits of cybernetics in maintaining an effective environment for the expression of dissent, and I will argue that approaching the design of such a space from a cybernetic angle is, on the one hand, vital for thinking about how such spaces could become more effective and dynamically governed, and on the other, far from exhaustive of the salient factors to be accounted for as a result of the trust centred orientation of these spaces.

7.6.1 Technological facilitation and the impact of cybernetics on spaces of dissent

PK's digital forum, as was discussed at the outset of the chapter, is a generic board which the collective has maintained for almost two decades. This means the forum is home to an extremely rich and informative bed of information and knowledge which has been gathered over this time, but it is also limited in several respects. In response to the technical limitations of the forum, Tony began a thread to discuss the need to make changes to the space, while ensuring that the rich catalogue of knowledge that had been developed wasn't lost in the process. Chris, as a participant on the forum who took an interest in technology and software, suggested several potential options to the group. After several months of intermittent discussion regarding the topic and having discussed the alternative possibility of restructuring the existing board, it was decided NextCloud would be used to enable new communicative capacities for the group while maintaining the current use of the forum for other discussions. This approach would also lessen PK's exclusive reliance on the forum, which they hoped

would mean that it could be used for more focused discussions, rather than being used to try to solve, plan and discuss all the organisation's diverse and varied tasks. Tony emphasised the need to focus on the needs of the collective rather than the speculative possibilities afforded by novel technologies:

> *"But I am also absolutely of the opinion that "tools" cannot help us if we don't know what we actually want."* (Tony, Premium Collective forum, *Realignment Premium*)

A post made by Uwe contributed to this by identifying three problems that he hoped to be ameliorated through the introduction of new digital organisation tools. The first of these problems, concerning the confusing and disordered nature of the board and the lack of straightforward ways to work through the data, was discussed above (see section 4.3.1). The other two issues identified by Uwe were as follows:

> *"2. Our networking at the collective has also gone to sleep: it has between the orga-team and the rest of the collective, as well as between the collective and the diverse partners who work together. New partners join only very occasionally, there haven't been new speakers in forever, new delivery structures have not been built by anyone in ages, and that means Premium is stuck. I'm sure that no one has pushed for this development with negative intentions, but there were also a couple of people in orga-team that see this state as the new norm and even wanted to declare the rest of the collective as no longer belonging, i.e., that only the orga-team are the collective. That would be, however, not only against our core philosophy of equality of all people, but it would also be very counter-productive, because the orga-team alone don't simply supervise everything and also cannot supervise everything [...]*
> *3. Now in Corona-times we only have 45 percent of the sales but, according to the latest numbers, still 80 percent of the costs. We must therefore urgently develop our contacts and the sales."* (Lübbermann, Premium Collective forum, *Online Tools*)

Despite the clarity of the needs stated by Uwe, Tony, in his response, stated that he was doubtful that Uwe's concerns would be satisfactorily resolved through the NextCloud platform which was beginning to be implemented. To some extent the move to NextCloud provided a promising opportunity for the organisation to be greater able to communicate effectively and

plan their work together in ways which they had been limited from previously, giving the collective new organisational capacities. On the other hand, these changes introduced challenges which need to be worked through and accounted for. First, the introduction of the new tools created a steep learning curve for discussants to adjust to, as was argued by Uwe:

> *"We of course had different opinions on subjects; while experienced IT people, for example, find our processes not digital enough or our tool-deck insufficient and think we need one that can do much more, it is still hard for some people to use."*
> (Lübbermann, Premium Collective forum, *Further Realignment Premium 2021*)

Second, as I discussed with two fellow researchers who had been provided access to the forum for their own work, there are questions regarding how the addition of these new tools will impact some of the other principles which PK have emphasised over the years, such as the easy and transparent accessibility to all participants in the collective. I discussed how PK's commitment to transparent accessibility of their work would be impacted by these changes, since the use of new software - along with the usernames and passwords, the possible greater use of confidential or personal data, and so on - raise questions regarding who does and doesn't get granted access to observe and participate in the discussions and decisions which are made in the new NextCloud space. While the data gathering phase of my research ending resulted in me not requesting access to the NextCloud space, the question of how the introduction of new technologies might impact organisational commitments like these show the complex and unexpected knock-on effects that introducing such new tools can produce.

7.6.2 Limits to the impact of cybernetic design on dissensual spaces

These issues regarding the consequences of introducing new technological frameworks to spaces of dissent have direct relevance to the question of the importance of cybernetics in facilitating the self-governance of these spaces. This is not only a consequence of the iconic association of cybernetics with digital technology (an association this research has largely ignored) but more as a result of cybernetics' impact on the question of the effective design of

organisations and tools for their governance, and more specifically for my concerns, spaces in which dis/agreement can thrive. Despite the clear relevance of cybernetics to thinking about how to effectively design spaces of dissent (discussed next), I first want to draw attention to the limits of approaching these questions with a perspective of good design and effective planning in mind. In many ways, PK's ways of working evidence the relative unimportance of focusing on the development of tools and advanced techniques for improving dissensual spaces. If anything, what PK demonstrate is that such spaces can remain viable even under conditions of relatively messy and *ad hoc* technologies and spaces.[110] In this regard, PK's practice is reminiscent of the handful of telex machines, board pens and blackboards used during the Cybersyn project (Medina, 2011). However, while that project showed how implementing cybernetics effectively could have unexpectedly impressive effects, even with very low-tech infrastructure, PK show that the same impressive results can emerge from a culture of generosity, trust, and identity with the whole. In this investigation of spaces of dissent and the conditions required to enable their emergence, it is apparent that a focus on the "*human centred*" approach taken by PK is the primary requirement for the viable facilitation of such spaces, even in circumstances where the arrangement of them is messy, improvised and altogether lacking in rigorous organisational design. This leads me to tentatively suggest that in the context of creating spaces of dissent, a sense of shared "*identity with the whole*" can sustain such a space despite a quite disordered organisational structure, whereas I find no

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[110] Other examples could have been provided here regarding the sometimes chaotic ways in which PK are organised. For example, while investigating the group's OS governance structure, which is essential to their long-term goals of spreading their organisational approach to others, I had some trouble getting a full up-to-date version of the OS documents and received several partial versions of the OS from different sources. I also analysed a discussion on the forum in which Peter, who offered to codify the governance process, had had a *several yearlong* discussion on the board in which he requested feedback on his work and details about the process. This long interaction led to him expressing some frustration to me about the lack of organisational clarity at PK. However, despite this, the OS has been introduced in several other organisations, and, somehow, PK seem to overcome their organisational issues through their generous attentiveness to their members' needs when it counts the most. This shows the ease organisations like PK have with messiness, but also the difficulties which can sometimes emerge from such mess.

reason to suggest that the obverse is the case: namely, that a good organisational structure can sustain a culture of dissent in contexts which lack a shared sense of feeling 'a part' of the organisation in question.

7.6.3 The impact of cybernetic design on dissensual spaces

Despite contending that the heart of facilitating dissent relates to a trusting, emotional disposition which cannot directly be transposed into a design approach, I maintain that despite this limitation cybernetics remains of crucial importance to considering how to design and (self-)govern such spaces. Furthermore, I am unaware of any existing work investigating how such spaces can be designed, meaning that the work of understanding how appropriate environments for the democratic expression of dissent can be facilitated still needs to be done. Although PK have demonstrated that such spaces can be effectively developed and maintained, they have done it in an *ad hoc* fashion and used generic tools which have notable technical limitations. While this is testament to the primacy of trust and shared identity in these spaces, it is also indicative of limitations which might be mitigated if alternative tools were intentionally designed with PK's dissensual form of governance in mind. This is evidenced by PK's own expression of the need for a better framework for their collective discussion space, as well as their testimony that appropriate tools for such work do not appear to exist. Furthermore, Uwe and others associate the recent decline in the use of the forum with its technical limitations (see section 4.3.1) and sees this decline in use as both directly correlated with the messiness of the forum and as a direct threat to the democratic character of the collective.

The lack of work in this area of organisational design, and the fundamental role of dissent in PK's practice in general, indicates that the design of tools to better facilitate spaces of dissent could be a fruitful and important avenue of future research for cyberneticians and designers with an interest in the subject. The fact that such spaces can overcome organisational disorder

does not imply that they thrive on it (in fact, resistance to the board's messiness is a constant subject of discussion in the collective), and purpose build spaces which facilitate the expression and sustainment of dissent could improve the practices of seasoned practitioners like PK. It could also, importantly, make the process of enabling dissent to emerge easier within organisations without the vision and guidance of practitioners like Uwe. Although, as was stated above, such tools are unlikely to be sufficient to enable dissent without a strong culture of trust to support them.

Jack's earlier comments about CK's use of software and their tendency towards decision-making processes, as opposed to open discussion spaces (see section 7.4.1), are indicative of the way many software technologies are structured towards decision-making processes, rather than open dissensual spaces. It is also indicative of the impact of the implicit assumptions of their designers and the (sometimes unintentional) steering effect this can have on organisations who employ such software, harking back to the discussion in the last chapter regarding the conscious reassessment of one's language and practice (see section 6.8.2). On the other hand, PK's unconventional and inventive use of a basic forum is equally indicative of the possibility of reappropriating tools and *mis*using them towards radically participatory ends. This is suggestive of the ambivalence of digital technologies in relation to their support of dissensual spaces. They may be supportive and impactful for the development of new organisational capacities, but this affordance is just as likely to be expressed through their reappropriation, inventive exploitation, or 'hacking' as it is to be done through their intentional design with cybernetic principles in mind. This leads me to cautiously conclude, then, that on the one hand cybernetic design may help in the creation of better constructed spaces in which dissent can

occur, while on the other, the creation of such spaces may equally be constructed with an attitude of improvisation, repurposing, or misuse.[111]

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[111] The invocation of the idea of *misuse* here is drawn, first, from an observation of the unusual way in which PK make use of their forum: using it for general governance communications is a far-cry from the usual use such message boards are put to, and contrasts significantly with tools like Notion which are designed specifically to facilitate easier project management. Second, the term is associated with the concept of messiness which has informed this study. The kind of improvisational utilisation of tools for purposes unforeseen by their designers runs through several of the examples discussed during this research, such as the use of telex machines during the Cybersyn project; PK's use of the forum; or perhaps even Phillips' use of the VSM at Cloughjordan as a governance structure and not merely a diagnostic tool.

7.7 The facilitation of spaces of dissent

Having explored (1) the general orientation of PK's governance, which primarily concerns the cultivation and reproduction of trust, mutual identity and *"feeling a part"* of the organisation, and (2) having discussed the potential impact of cybernetics in terms of designing appropriate tools to facilitate spaces in which dissensus can thrive, I can briefly return to the difficult question of cybernetics as an approach to governance within dissensual spaces. As was mentioned above, a consideration of how cybernetics, often understood as 'the science of control', can support the expression of Rancièrian politics, which opposes and undermines systems of ordering and control, seems like an impossible knot to untie. How could that which brings order facilitate that which opposes and undermines established orders?

In answering this I suggest two considerations. Firstly, I have argued throughout that the forum used by PK constitutes a space in which dissent can emerge, though, like all politics this emergence is impure.[112] If this analysis has grounding, then forms of governance do not necessitate the elimination or exclusion of politics altogether, despite their antagonistic relationship. Indeed, Rancière states that no authority can be established without having to *"speak 'equal to equal'"* to a greater or lesser degree and argues that all unequal social relations imply some minimal assumption of equality to function (Rancière, 2014, p48). Without such an implicit presence of equality it would be impossible *"for pupils to understand their schoolmasters or for the ignorant to obey the government of experts"* (Rancière, 2014, p48). Second, some scholars have accused Rancière's politics of being inevitably fragile, ephemeral, and even "*unabashedly sporadic and intermittent"* (Hallward, 2006, p123). While this is surely true of politics as such ("pure" politics), the impurity of actuated politics runs in

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[112] Chambers argues that for Rancière there can be no *"pure politics"* (Chambers, 2011, p310)

tension with this claim. Pure politics may be inevitably momentary, but impure politics, mixed with some forms of policing, may become capable of being sustained over time. The first of these claims leads me to argue that the notion of governance is not simply incompatible with the emergence of politics, since both are always already mixed and impure, while the latter implies that the sustainment of politics necessitates that it is somehow governed (or facilitated), even if such facilitation at the same time constrains politics and renders it impure. This makes better sense of my earlier allusions to Rancière's statement that better and worse forms of police exist (see section 7.3.2) and my suggestion that cybernetics may offer means of developing better ways of policing.

We might now suggest two heuristic criteria for considering what a 'better' form of policing might look like, with the preceding investigation of PK's forum in mind. First, it would be (1) governance which (like PK's) *allows for and encourages the emergence of dissent*, and second, which (2) *enables that dissent to be sustained and to remain present over time*. The issue of sustaining the possibility of dissent's emergence within organisations returns me to the role of cybernetics in facilitating such spaces and is specifically relevant for the question of organisational *viability* which is central to organisational cybernetics.

The uneasy relationship between Rancièrian politics and cybernetics leads me to argue that although the governance of a space for the expression of dissent is a thorny, messy and inevitably contradiction-ridden subject of enquiry, I contend that for a space for the expression of dissent to remain viable over an extended period of time it must be 'governed' in at least some minimal way. While the governance of PK's forum does not take the form of explicit intervention in, or regulation of, discussions I nonetheless argue that governance of the space is clearly present, though the term 'facilitation' seems more fitting. This form of governance has little to do with the monitoring or regulation of members' behaviour or forms of expression, but in *maintaining the space* in which these expressions take place in order to ensure that the

space remains viable, often taking the form of re-enforcing and protecting the logic of equality which ensures that dissent remains possible.[113]

In more explicit terms, governance of the forum requires, (1) first, the protection of the space by guaranteeing that equality is practised on the forum, and (2) that equality's precise specification is subject to ongoing deliberation, revision, and reinforcement. The precise definition of equality is left without exhaustive definition, which has the effect of allowing each of the members to consider their own understanding of equality and where the lines exist between maintaining and breaking it. The fact that the group's collective understanding of equality is the subject of debate and deliberation is indicative of the collective notion of governance I observed on the forum, so too is it reminiscent of the continuous feedback relationship between the language and practice of equality I referred to in the previous chapter (see section 6.8.1). It is neither a single member (such as Lübbermann) nor a specific sub-group (like the orga-team) who is tasked with governance of the forum but is instead a group process in which the collective is responsible for, and responsive to, the governance of the space. I showed evidence of this during the above discussed debate (see section 7.2.3) in the

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[113] Lübbermann's approach to governance, discussed above, and its resonance with Clastres' depiction of the titular chief, may be informative here. His readiness to be criticised, and his positive encouragement of it, is suggestive of a form of power which enables and expects to be undermined at times. In one post Uwe displayed some insecurity regarding the forum's readiness to criticise him, claiming:

> *"I am only a person with a limited level of knowledge, wealth of experience, daily form, intellect, all that. Barely anything could be more dangerous for Premium, I believe, than if no one would trust themselves to say something about not thought-through suggestions from me. I have heard of businesses in which it's like that, but with us hopefully not :-)*
> *Who of you would say something if he or she is of the opinion that one of my suggestions is not a good idea?"* (Lübbermann, Premium Collective forum, *Decision-making processes, and resolutions: a question of trust*)

In response to this thread, Michael responded by saying he would criticise him readily, but also noted Uwe's "*stubbornness*" potentially getting in the way of completely open criticism; a response that betrays both an openness to criticism and the paradoxical difficulty involved in holding power while remaining open to being criticised.

The discussion also provokes me to consider the limits of the board and the centrality of Uwe's role on it. While participation from all members is strongly encouraged, it remains the case that participation on the board often centres around a small group of members who tend to frame and guide discussions to a significant degree. Lübbermann is the most involved in the broadest range of discussions, but a group of around 10 participate very frequently. Most of the 100s of members of the forum contribute very rarely, if at all, to the discussions that take place on the forum.

form of both criticisms levelled at Uwe and the subsequent disagreement from both Uwe and other members in response to those criticisms.

This form of governance, which cybernetics may be informative in the development of, can be understood as being oriented around the goal of enabling politics (or rather the encouragement of its emergence) to be sustained within an organisational space. This form of governance has more in common with the facilitation of the *"titular chief"* than it does with the conventional understanding of governance as that which ensures that processes are followed, and limits are not overstepped. In other words, the form of (self-)governance I have here described can be characterised as being distinctly non-managerial. While agreement-processes require governance which ensures that the processes and their outcomes are maintained, spaces of dissent require a quite different form of governance to ensure that they remain viable. Governance of the latter is far less explicit and visible, and is better thought of as facilitation, but it is nonetheless equally necessary for the sustainment of a democratic community, and consequently for the development of a democratic cybernetics.

7.7.1 Cybernetics, process, and facilitation

These two understandings of facilitation lead me to consider another angle from which 'governance' might be thought of in cybernetic terms which take account of, on the one hand both *consensus and dissensus*, and on the other, both *processes and spaces* through which organising takes place. Cybernetics as it pertains to democratic organisations not only requires elaboration in spatial terms, but also on the level of how spaces and processes interact. The facilitation of dissent is not merely a consequence of the space in which it occurs, but how that space and the processes within it interact and resonate with one another. PK is made up of processes, policies, and protocols and these are inter-related with the space which facilitates them. Their policies and practices mix with the spatial context in which they operate. This interlinking of spaces and processes also draws attention to the deeply contextual way in which

the organisational space should be understood. The space is not merely the board itself as a piece of (inventively utilised) software but is an emergent consequence of the interaction between PK's policies, practices and, vitally, their organisational culture, made up of human relationships and emotional bonds. This kind of holistic, multifaceted understanding of space and the processes within it is necessary for a proper analysis of how dissent might be effectively facilitated in democratic organisations with the use of dissent. This also brings to the fore the role of cybernetics in facilitating better spaces of dissent: these spaces are not only a consequence of the human relationships which make them up, but the relations broadly understood, including their processes and their inter-relation with the space in which they are practised.

We might illustrate the complexity, messiness, and inter-relatedness of these different aspects of the forum by considering some of the limitations I observed on the forum, each of which cannot be simplistically blamed on failures within their processes, their space or their inter-personal relationships. Consensus is the key decision-making process around which PK's practice orients, and like any well implemented consensus process, actively encourages the expression of dissent (the compatibility of dissent and consensus decision-making processes was noted during section 7.3.1). Despite the openness of this process, it also has some clear limitations. First, (1) discussions are often moved forward by a relatively small group of particularly prominent members, raising the concern of an informal sub-group within the organisation having implicitly more decision-making power than other members of the organisation. It is also (2) hard to assess the extent to which dissent is acted upon, especially from those who do not post on the board frequently. Despite being a quite frequent contributor to the forum, I earlier showed Rachel's vocal expression of dissent from Uwe be responded to negatively by Uwe and the group, and although this situation was earlier read as demonstrative of an open culture of dissent, it can equally be interpreted as an instance of a dissenting voice

being dismissed. We also saw Garry, a not so frequent contributor to the board, vocalise his disdain for the boards *"never-ending detail"* (see section 4.3.1) but on this occasion no further comment was made on the thread in question, and no resolution to that issue was reached (at least not on the thread in which the issue was raised on that occasion), despite the complaint being echoed and reiterated in other instances. Finally, I earlier referred to claims that (3) activity on the board has varied widely during different times (peaking during the height of the Covid pandemic) and noted that there were suggestions that activity on the forum had dropped off over time.

These three criticisms of the forum could be characterised as limitations of the organisational processes, the space, or with the human relationships which make up PK, but I wager that none of these perspectives are sufficient to account for them altogether. In each case these limitations can be characterised in many ways, and I have shown examples above (in relation to the 'control, trust and transparency' discussion during section 7.2.3) of how different members characterise such situations in distinct ways depending on their perspective. One value of approaching these problems with a cybernetic orientation is an emphasis on the *"patterns which connect"* these various ways of seeing, finding commonalities between them and threading together their underlying resonances (Bateson, 1979, p12). In this sense, one role of democratic cybernetics is to act as a means of establishing a shared language capable of bringing together the diverse perspectives into a space of commonality and agreement, while at the same time acting as a means of thinking about how to better facilitate dissent.[114]

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[114] The success of such a shared language if heavily dependent, as I showed in the previous chapters, on its articulation in contextually situated, commonly understood terms and an avoidance of its more obscure and inaccessible expressions (see previous chapter and section 8.2.1).

7.8 Two understandings of cybernetics in dis/agreement

As a way of wrapping up this chapter and beginning to consolidate what I have found throughout this wide-ranging research, I present two quite different conceptions of cybernetics which have run implicitly through these findings and more broadly through organisational cybernetics. Rendering these characterisations of cybernetics more clearly visible will go some way, I hope, to revealing where democratic applications of cybernetics have been restricted in their self-conception, leading to a failure to take advantage of important strands of the discourse which could be impactful to the future development of the subject.

The former cybernetic understanding, which has been identified more closely with the initial three finding chapters of this project, has accounted for many applications of cybernetics to democratic organisations (despite my suggestion that they be re-articulated into *low* theoretic forms), while the latter, which I associate more closely with this chapter, has been largely understated in the existing canon and deserves greater attention in future research. Vitally, I want to show how these two conceptions of cybernetics and, conversely, the relationship between agreement and disagreement which has been the focus of this chapter, are fundamentally interrelated and mutually dependent on one another. I will do this by considering an interesting idiosyncrasy which emerged from my findings in which Jack and Walker, my two most prominent research participants, both referred to the same heuristic metaphor in order to make sense of the, sometimes confusing, relationship between agreement and disagreement as it is understood in this research.

7.8.1 Cybernetics as conducive with stability and homeostasis

The original popular conception of cybernetics, as it was defined by Wiener in *Cybernetics: Or control and communication in the animal and machine*, is characterised by a focus on the means by which systems can maintain homeostasis despite changing circumstances (Wiener,

2019). It is this concern for the stability of an organisation which led to cybernetics lionising 'control' as a vital characteristic of the subject and as essential to the survival of any complex system. This primary focus on stability and balance are ineliminable characteristics of an organisation which wants to broadly retain its identity as an organisation and is the ultimate criteria upon which the VSM is based. A focus on the correction and dampening of 'errors' has led some to accuse Wienerian cybernetics of pathologising positive feedback, as well as potentially beneficial disturbances to internal order which might instigate adaptive development of the system (Plant, 2014). This characterisation of cybernetics as being concerned with internal stability and homeostasis, I claim, is strongly resonant with the democratic tendencies towards agreement and consensus. Consensus here is not understood simply as a decision-making process but as a tendency towards coming to shared agreements as a group. This understanding of cybernetics, as concerning error-correction and maintaining homeostatic stability, has been the dominant view in application of cybernetics to democratic organisations.

7.8.2 Cybernetics as conducive with adaptability and responsiveness

While the value of retaining stability (which is to say, viability) in democratic organisations has been taken for granted in this project as a beneficial goal to which organisations should strive, I have also sought to emphasise the beneficial implications of facilitating opportunities for existing stabilities to be disturbed and undermined, leading to organisational adaptation to changing circumstances. Both the vulnerability produced by PK's dissensual space, and the trust required to enable anyone and everyone to participate equally are indicative of the risky yet worthwhile conception of organising as having as much to do with generating ideas and novelty as it has to do with limiting instability and uncertainty.

We understand this appraisal of disagreement to be correlated with an alternative conception of cybernetics which play an essential role in the subject's diverse lexicon, but which has been

implicitly de-emphasised in organisational cybernetics, broadly speaking. Conceptualising cybernetics as holding adaptation and responsiveness at its zenith, above even the retention of a stable identity, is indicative of an understanding of cybernetics in which survival and viability of a system may at times require a radical reassessment of the principles around which an organisation is oriented. From this perspective, the retention of stability in an organisation is of less importance than its adaptability to ever changing external and internal factors. PK's reassessment of their collective purpose was exemplified at the outset of this chapter when their discussions regarding how they might survive the crisis led to them revising their identity as a cola-producing collective altogether, opening the space for them to proceed into new avenues of production and collaboration. I have argued here that their openness to, and facilitation of, dissent created a context in which a seemingly insurmountable external disturbance could be adapted to by effectively leveraging everyone's knowledge and diversity of perspectives. The openness of their discussion space provided them with the widest range of inputs and factors to be considered, meaning the group could better account for the many possibilities contributing to the complex problem they found themselves in.

From this perspective both consensus and dissensus (& their corollaries agreement and disagreement) are understood as fundamentally ambivalent regarding the adaptability and survival of the organisation in question, which is to say that both may be conducive to its thriving or detrimental to it depending on the characteristics of the consensus/dissensus in question. Consensus may take the form of shared identity and unity, or it may amount to a pathological conformity and bland conventionalism, leading to compliant dogmatism and organisational stasis. Equally, I have here argued that dissensus can lead to greater creativity, adaptability, and unforeseeable insight for an organisation, but it can equally lead to organisational instability, chaos, and the exacerbation of internal disputes. Neither one nor the other are beneficial in themselves. However, the prioritisation of the former over the latter is

a tendency that a consideration of Rancière's radical re-framing of democracy brings sharply into focus.

7.8.3 Yin-yang and the interconnection between consensus and dissensus

The prioritisation of the governance of processes of agreement rather than the facilitation of spaces of disagreement have led to a one-sided focus in democratic applications of cybernetics, I have argued. This imbalance should be redressed by considering how spaces of dissent might be produced within democratic organisations, which I claim constitute an untapped source of creative adaptability within democratic organisations. PK's focus on consensus decision-making and processes of agreement making remind us, however, that neither consensus nor dissensus can be sustained in a vacuum. Both these ways of understanding democratic governance are dependent on one another and should be sustained by democratic collectives, which I argue PK have been successful in doing despite less-than-ideal circumstances. To illustrate the mutual dependence and compatibility of these concepts I will conclude by briefly considering a strange idiosyncrasy which emerged during my discussions with two interview participants regarding disagreement; in which they both independently introduced the metaphorical image of yin-yang as a way of articulating their understanding of disagreement (as applied in my research) and its relationship with processes of agreement.

During my later discussions with Jack my findings were beginning to take form and my conception of disagreement was beginning to take shape (although it was early in development, and I had not connected the concept to its dependence on spaces). As I inarticulately tried to explain the conception of dissent to Jack, he referred to the meditative and martial arts practices he was spending his downtime exploring. This he saw as a way of making sense of disagreement and its relationship with decision-making:

> "*I feel like it's a bit like the Tai chi - the white and the black thing - I wonder if they emphasise both sides of the coin?*" (Jack, interview 10)

This comment led me to try to elaborate what made agreement and disagreement distinct, which in turn led to me (and, it seemed, both of us) gaining a far clearer understanding of the relationship between dissent and *spaces* which facilitate them. Although the link had come to my mind prior to this exchange, it was this moment which left me with a far greater sense of clarity regarding the relationship between it and the issues of governance and cybernetics I was trying to make sense of. This conversation led to greater clarity regarding the role dissent played in my project, but it was given a second layer of significance not long after when I discussed the same subject with Walker, and he introduced the same visual metaphor to explain how he had come to similar conclusions regarding Beer's views of the relationship between centralisation and decentralisation in organisational terms:

> "*For me I guess there were a number of things going on at the same time with people talking about contradictions within the VSM. So, you've got the contradiction between centralisation and decentralisation and autonomy and cohesion. And on the one hand you want as much decentralisation as you can, but on the other hand if you get too much decentralisation the whole thing doesn't hold together. So, then you have to centralise, but then you limit autonomy… all these contradictions.*
> *And the western mind sees opposites as mutually exclusive. So, if it's centralised it can't be decentralised and vice versa. And what Stafford showed very clearly is that an organisation is both at the same time. And there was this little presentation he gave called "to be and not to be" and* [when] *I was looking at the yin-yang thing I was trying to get my head around what it was all about. And suddenly I had this flash that this thing about centralisation and decentralisation is fundamentally a yin-yang. You don't want one or the other, you want both working for their mutual benefit… it's like saying shall we have day or night? And the answer is you've got to have both… so you need these things working together.*" (Walker, interview 8)

These considerations of the mutual dependence of intertwined concepts like these had led Walker to author a short essay entitled *"Yin and Yang and the VSM"*, in which he meditated on the need to balance seemingly opposing concepts in the effective practice of organisational cybernetics. There, Walker further elaborates the *"meta-pattern"* which emerges from seeing

the mutual interdependence of what might at first appear to be concepts in tension with each other:

> "*One story tells of a monk who was meditating in the mountains and watching the way shadows changed as the sun moved in the sky. He could see the pattern of bright light and shadow on the hills below him changing. His eureka moment came when he saw that there was always a* **meta-pattern** *of light (yin) and dark (yang) on the hills: part was always light, part was always in shade, but the pattern was always there…. His insight developed into the yin-yang understanding of opposites being complementary. Any one part of the hill could either be light* **or** *dark, but there was a higher understanding: a meta-understanding. The yin-yang pattern could always be recognised no matter where the sun happened to be. And they realised this applies to everything. In the Tao-te-Ching Lau Tzu writes*
>
> "*Being and non-being produce each other*
>
> *Difficult and easy complement each other"* (Walker, *Yin and Yang and the VSM,* p2-3 [emphasis in original])

What emerges is the vital interrelation of both consensus and dissensus, or dis/agreement, and the need for them to both be facilitated as a means of creating functional democratic governance. PK show how both can be facilitated and sustained in the same organisational space, but the dominant language of decision-making, process and agreement have often obscured the latter from view.

7.9 Summary

This chapter has explored the vital importance of accounting for and accommodating dissent when considering the impact of cybernetics on democratic organising and organisations. I have argued that the relevance of this conception of democratic politics has been entirely ignored from existing explorations of cybernetics and democracy. This exclusion has contributed to the democratic application of cybernetics being overly concerned with decision-making processes at the expense of developing a space and culture of trust, leading to *"identity with the whole".* This identity is essential for developing a context in which democratically grounded adaptation can emerge through dissent. Dissent (from existent practices and conventions within the organisation) can generate adaptive solutions to organisational problems which might otherwise be ignored by conventional thinking or strict adherence to existing processes.

I have explored the distinction between consensus and dissensus further by associating the former with decision-making and *process*, while the latter is characterised by *spaces* in which it is easy for it to emerge. This was evidenced by an exploration of PK's long-running digital forum, which has adaptively responded to changing circumstances over several decades (and the Covid pandemic in recent years) through a radically democratic approach to self-governance and organisational culture. I argued that PK are a paradigmatic example of the approach to democratic governance defended in this chapter and future research into the governance of spaces of dissent would do well to learn from PK's example. I also considered the relevance of cybernetics to this interpretation of democratic self-governance, and the uneasy relationship between cybernetics and dissensus. The 'control' of spaces of dissent is seemingly a contradiction in terms, though clearly the facilitation and maintenance of such spaces is needed for them to remain viable over time, as the arguably *"good"* (or at least *"preferable"*) policing which characterises PK shows (Rancière, 1999, p31). Equally, the

care-based practices, generosity and *"human centred"* approach to governance on display at PK show that while cybernetics may be impactful in such a space it should remain secondary to the higher values of the democratic group, which are best understood in the final instance as expressions of the *assumption of equality*. Finally, I argued that both agreement and disagreement, and therefore consensus and dissensus, are of equal relevance to the balanced sustainment and adaptability of democratic organisations. Seeing one as coming prior to or higher than the other is likely to lead to, on the one hand a lack of internal coherence and on the other an over-emphasis on control and conformity. The latter has predominated in democratic organisations generally and cybernetic interpretations of democracy. It is this imbalance that this chapter seeks to redress, the consequences of which would be both the deepening of dissensual democracy in participatory organisations and the substantiation of cybernetic contributions to those organisations.

7.9.1 Key contribution from the chapter

This chapter has contributed a major way of thinking about democracy in cybernetic terms which has been left out by of existing works by cyberneticians and organisation theorists. While there have been studies considering the possibility of organising and sustaining dissent, this project has gone further by showing the link between dissent and organisational spaces (or 'stages') and has shown that the facilitation of dissent within organisations can contribute to their increased adaptability in situations of great uncertainty. Furthermore, I have proposed organisational cybernetics as an appropriate discursive framework through which to understand how dissent within organisations might be sustained. I have shown that deep organisational democracy (such as that which PK practices) comes not from consensus or dissensus alone but from the mutual reinforcement and the resonances between them. This also implies their compatibility, which was empirically supported by my analysis of PK's forum.

Alongside the introduction of dissensual democracy within cybernetic organisational thinking, I located this within the spatial domain, indicating that by thinking spatially as well as in terms of process, cyberneticians can deepen democratic structures and provide greater opportunity for emergent intelligence and problem-solving to self-organise among participants. *Spaces of dissent* therefore provide a way of thinking about how autonomous problem-solving can be sustained while minimising the reliance on experts and internal hierarchies within organisations.

Finally, the investigation of PK revealed the centrality of what I called 'trust' in sustaining spaces of dissent. PK's sometimes chaotic organisational practices might benefit from further refinement, but despite the disorder of some of their processes they have proven themselves capable of adapting effectively to even the most unforeseeable and severe perturbations. I showed that this resulted from the social bonds and culture of egalitarianism which they continuously reinforce among all their members, partners, and customers on an ongoing basis. Organisational refinement is of crucial importance to improving organisational practices, but the reinforcement of social bonds and interpersonal trust remains the core of facilitating *spaces of dissent*.

Chapter 8: Democratic theatre - dissent from high theory and ad hoc cybernetics

'*Above all, the polarity between centralisation and decentralisation – one masquerading as oppressions and the other as freedom – is a myth. Even if the homoeostatic balance point turns out not to be always computable, it surely exists. The poles are two absurdities for any viable system, as our own bodies will tell us. And yet government and business continue the great debate, to the advantages only of those politicians and consultants who find the system in one state and promptly recommend a switch to the other.*' (Beer, 1975, p428)

"*Through science we set up the hypothesis that institutions have certain systemic characteristics that make them highly stable - in itself a good - and therefore unadaptable - something highly dangerous.*" (Beer, 1975, p385)

8.1 Introduction

Over the last four chapters I have analysed the relationship between cybernetics and democracy, out of which has emerged two major concepts: a democratic language of *low cybernetics* and the facilitation of *spaces of dissent*. During this chapter I will draw these concepts together, exploring the relations between them and discussing how each is embedded within the other.

8.1.1 Organisational performance

One way I will do this is by returning to the metaphorical invocation of 'performance', 'theatre' and 'staging' which appeared several times through these findings, despite not being explicitly linked together until now. Specifically, there have been two contexts in which these metaphors appeared. First, within my discussion of Rancière there were a number of references to performance, staging and theatrics; a set of metaphors often used in his writings, not to mention his works concerning the democratisation of theatre explicitly (which have not been discussed here) (Rancière, 2021; Rancière, 2019). In this context performance is understood as an expression of politics, an embodiment of equality in the face of some unequal police order, which calls that order into question and shows how it might be arranged differently. In this sense, enactments of equality 'stage' dissent within a theatre of democracy. I especially emphasised the notion of 'staging' equality in this analysis to bring to the fore the spatial aspect of this notion of performance. Equality, for Rancière, is not a claim, request, or demand, but something which is performatively proved when it is embodied in activity which disrupts an unequal state of things. The other sense in which I have spoken about 'performance' during this research, which was made a little less overt when it first appeared, was that of Pickering's 'performative ontology', in which he associates cybernetics with the invention of situated

systems and objects which 'stage' cybernetic hypotheses, amounting to what he calls cybernetics' *"performative ontology"* (discussed during Chapter 4). Pickering argues:

> *"We might thus think of cybernetics as staging for us a performative epistemology, directly engaged with its performative ontology—a vision of knowledge as part of performance rather than as an external controller of it."* (Pickering, 2010, p25)

Expanding on his conception in more detail, Pickering discusses Pask's very literal embodiment of performative ontology in his text *Proposals for Cybernetic Theatre,* about which Pickering says:

> *"it is worth remarking that Pask's cybernetic theatre was literally an ontological theatre, too. One might think of conventional theatre as staging a representational ontology, in which the audience watches a depiction of events, known already to everyone on the other side of the curtain, suggesting a vision of life more generally as the progressive exposure of a pre-given destiny. I have repeatedly argued that a different ontological moral could be extracted from cybernetic devices, but in the case of Pask's cybernetic theatre no such "extraction" is necessary—within the frame of the play's structural elements, the audience was directly confronted with and participated in an unforeseeable performative becoming of human affairs. In the cybernetic theatre, then, the ontology of becoming was right on the surface."* (Pickering, 2010, p351)

In this sense, cybernetic objects perform cybernetic hypotheses, they behaviourally stage a demonstrative model, showing how a system works through its activity rather than through the representational claims of an author. In this sense, Ashby's theory of cognitive activity was proved not by the words he wrote, but by the performed activity of the homeostat he created (Ashby, 1960). This kind of object performance is, in this context, the performance of democratic organisations themselves: made up of forms of governance practices, communicative strategies, decision-making protocols, and so on.

These two senses of 'performance' then play quite distinct roles in my thesis. One is an expression of organisational participants, as they express their disagreement with the

organisation's established ways of operating and demonstrate how things could be otherwise operated, while the latter is those established operations themselves, which 'stage' democratic practice though an organisation's activities and protocols. By exploring both notions of staging and performance, and the relationship between them, I will unravel the relationship between the two core outcomes of my research: *low cybernetics* and *spaces of dissent*.

8.1.2 Connecting low cybernetics to spaces of dissent

Before this, however, I will discuss the relationship between my two key research outcomes more directly, by discussing how each one compliments the other and is implied by the other. I will show first how the facilitation of dissent is dependent on the development of a commonly shared language, implying that in any organisation where dissent and cybernetics meet the development of a *low* cybernetics is necessary to allow for the emergence of dissensus with as little friction as possible. Second, I will show that low cybernetics is itself an expression of dissent as applied to cybernetic vocabulary. This analysis will point my analysis towards an understanding of democratic cybernetics as being inflected with a greater tendency towards hacking, re-appropriation, misusing and re-imagining systems than it is with their proper and intentional design by experts, professionals and the like. This instrumental, improvisational, and *ad hoc* interpretation of cybernetics, then, is conducive with both a conception of low cybernetics and spaces of dissent. I will end by considering another sense in which these two research outcomes are related: as different means of opposing and undermining the tendency towards technocracy which I identified at the outset of this research.

8.2 Conditions for the facilitation of dissent: low cybernetics as a condition for enabling dissent

8.2.1 Participatory clarity as a condition of dissent

PK's way of governing, to a large extent, takes the form of building trust, relationships and close bonds which bring out the best in people, make them feel comfortable together, leading them to feel free to speak honestly, take risks and perform with authenticity. In the previous chapter I tentatively suggested two minimal conditions which are required to facilitate spaces conducive to the emergence of dissent (see section 7.7). PK's organisational culture excels in ensuring that both conditions are met. But there is another condition of facilitating dissent which was left absent from my earlier analysis: going to the heart of Rancière's notion of politics and the conditions in which it can emerge. At the base of Rancière's politics, the very conditions which allow it to emerge at all, is the necessity of different parties being intelligible to one another, possessing the speech of persons rather than the mere voice of an animal. Invoking Aristotle, Rancière says:

> "*The supremely political destiny of man is attested by a sign: the possession of the logos, that is, of speech, which expresses, while the voice simply indicates. What speech expresses, what it makes evident for a community of subjects who understand it, is the useful and the harmful and, consequently, the just and the unjust. The possession of such an organ of expression marks the separation between two kinds of animals as the difference between two modes of access to sense experience: that of pleasure and suffering, common to all animals endowed with a voice, and that of good and evil, exclusive to human beings and already present in the perception of the useful and the harmful.*" (Rancière, 1999, p2)

It is this intelligibility which, on the one hand, is presupposed by policing as a condition of the rabble being capable of following instruction, but this same presupposition of intelligence is what enables politics to emerge as an opposing logic of equality (Rancière, 1999). This might

return me to what I saw at Suma and Cloughjordan, and the problematic notion of *cybernetic intuition*, which was understood as a way of distinguishing between those who did and did not 'speak the language' of high cybernetics. I showed how the failure of cybernetics to produce a language capable of being shared among all participants over the long term led to the exclusion of some from processes of agreement making, but also (as was brought into focus following an analysis of Rancière) withheld from them the language to express their dissent from priesthood's decisions in a way which was intelligible in the (cybernetic) terms the organisation embodied. As Walker argued earlier, it was *"a bit like the Pope saying 'God wants you to do this and so you better do as I tell you'"* (see section 4.4.1): those outside the priesthood were capable of understanding the language of commandments, but not of proposing their own language for making sense of the organisation. The resulting inability of all members to participate in decision-making, and to express their disagreements in the language deemed intelligible, is likely to have exacerbated the development of fatigue among their ranks. This shows that a lack of *participatory clarity* is in danger of impacting both agreement and disagreement-making negatively within democratic organisations, stunting both the group's ability to synchronise and unify around shared topics and standards, as well as to propose diversions from agreements towards novel paths which recast the obvious in a different light.

While the egalitarian logic of politics is bound to find ways of re-emerging even in situations far less favourable to its emergence than the conditions found at Cloughjordan, my discussion of dissent concerns not the *possibility* of its emergence, but rather its positive encouragement and facilitation, and its channelling into forms which are advantageous to both the organisation and participants who express it. This leads me to suggest that to encourage dissent - facilitate a culture in which it is aided in appearing and aids the organisation in adapting more responsively - a *shared language of organising* is required. This analysis reveals another

argument for the necessity of low cybernetics, as a necessary component of the development of a culture in which dissent from norms as well as their invention can be encouraged. In organisations which hope to utilise the logic and language of cybernetics in the (self-)control and communication of their organisation, while allowing the inventiveness of dissent to be expressed, the development of a folk cybernetics is required; or, as it was phrased earlier, a driving down of the level of accessibility of cybernetic vocabulary (see section 6.7).

8.2.2 Operative governance and dissent

During the first chapter of my findings I discussed claims made by both Phillips and Walker regarding democratic participants requiring an 'operative understanding' of the organisation, introduced in the context of discussing the importance of democratic participants understanding the design and theoretical underpinnings of the organisation in which they work (discussed Chapter 4). Now, with an analysis of the role of dis/agreement in mind, a problem with this line of thinking might more clearly come into focus. While it might be true that some participants are disinterested in participating in governance within democratic organisations, so long as the language used by governors and the logic underpinning their decisions remains inaccessible to some members, their capacity to become involved in governance is severely limited. Those who merely operate the system, without having the vocabulary or models to understand its inner workings, have their capacity to both subvert and participate in governance severely constrained by the impenetrable language of its designers. While some kinds of critique remain possible, criticism of the grounds upon which the system is designed are beyond rebuke so long as a technical tone is the only one which can make sense of the system in question. Articulating the means of calling into question, subverting or re-imagining aspects of the governance system are made tremendously harder when the grounds upon which that system is designed are obscured behind technical vocabulary, and remain untranslated into more accessible terms. While some members of an organisation may not want to actively

participate in governance, democratic organisations should nevertheless lower the communicative barriers to participating. Irrespective of participants' desire to participate, they should at least be capable of doing so, using a language which is comprehensible with ease. The claim that some do not want to participate is marked with a sense of hypocrisy when the means of participating require gaining fluency in a language which is challenging, inaccessible and uninviting to some.

What these reflections on the role of *participatory clarity, cybernetic intuition* and *operative governance* shows is that on top of the two minimal conditions of enabling dissent mentioned in the last chapter[115] I add a third criteria: namely, that the language spoken by the organisation should be understandable to the members therein and should therefore avoid speaking in a 'high', inaccessible parlance. Instead, it should be articulated in a vocabulary which lowers the boundaries of involvement as much as possible, while retaining the core meaning and significance of the governance practices and protocols in question. The capacity to dissent as well as consent to governance practices require that linguistic barriers to involvement remain as low as is possible. As has already been emphasised, this is not because dissent is unable to occur in situations where technical language emerges, but rather because I am concerned with the facilitation and encouragement of dissent, rather than its mere possibility.

This shows one sense in which spaces of dissent and low cybernetics encounter each other, since although cybernetics is not the only vocabulary for understanding democratic structure, so long as it is invoked within democratic organisations it should take on a low theoretic tone which is conducive to the creative emergence of dissent. This is because dissent cannot be facilitated on an equal footing without the development of a shared language which is understandable relatively equally. This shows the sense in which low cybernetics is required

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[115] (1) Allowing for and encouraging the emergence of dissent while (2) enabling that dissent to be sustained and to remain viable over time (see section 7.7).

in organisational contexts for the facilitation of spaces of dissent. This might lead me to ask whether the opposite is also true, namely: is dissent implied within the development of a low theory of cybernetics?

8.3 Is dissent needed to enable low cybernetics?

Low cybernetics can be understood as a manifestation of dissent against the technical vocabulary of high cybernetics. It is a means by which cybernetics can be translated into terms which undermine the distinction between those with and without cybernetic intuition, by articulating it in terms which are less obscured behind a technical vocabulary. It disrupts the distinction between the scientist and the novice, between the designer and the operator, between the learned and the unqualified.

While it might be claimed that this extension beyond the scientific could undermine the solid grounds upon which the subject was built, I argue to the contrary on three grounds. First, cybernetics has always sought to breach its disciplinary boundaries and become ever more integrated into fields beyond the ones it was first classified as concerning. Second, many of those domains extend well beyond those which can be categorised as scientific, including work by many of the foremost originators of the subject even early in its life (see section 2.1), including the exploration of the arts and aesthetic, utopianism and fictionalised speculation, spirituality, religion, and magic. Third, as Pickering attests to, cybernetics has always had an amateurish, extra-institutional, 'hobbyist' quality to it:

> "*Key contributions often had an almost hobbyist character: Walter built his first tortoises at home in his spare time; so did Ashby his homeostat (at least, in the apocryphal version of the story); likewise Beer and Pask's experimentation with biological and chemical computers; Bateson never in his life had a steady job… Cybernetics welled up outside the usual channels, and it found little support within those channels.*" (Pickering, 2010, p10)

In this sense, the associations of cybernetics with rigorous science and mathematical exactitude account for only a specific subset of the transdisciplinary subject, yet it is all too often treated as the whole of the subject with a reductive protectiveness which is out of rhythm with the boundary-crossing discourse. It is appropriate, then, that the reluctance to let in the

messy, extra-scientific domain of democratic practice should be dissented from, not by claiming that it is flawed, but by performatively staging a *low cybernetics* which subverts its disciplinary inaccessibility.

8.3.1 Ad hoc cybernetics

Low cybernetics, understood as dissenting from expressions of cybernetics that ally themselves with the manager, the scientist and the technocrat, can be thought of in terms of taking cybernetics discourse as its material and using its models, concepts and patterns of thought to construct tools, objects and models to assist democratic purposes, on democratic terms. The low cybernetician re-engineers, misuses and re-appropriates the tools of cybernetics for the ends of democracy. I showed in the last chapter that the most effective democratic space I encountered during this research was constructed out of a very basic internet messaging board, and that its ingenuity was found not in its fusion with sensors and microprocessors, but it's curation of trust, relationships and long-lasting bonds. There, I argued that although aid to democratic action might come from the clever use of high-tech tools and cutting-edge devices, it is equally likely (perhaps even more likely) to come from *"their re-appropriation, inventive exploitation or 'hacking'"* and should be done with *"an attitude of improvisation, repurposing or misuse"*. PK's board expresses not only an excellent stage for the facilitation of dissent, but also constitutes a demonstration of low cybernetics in action, grafting outdated technologies to deep bonds of trust rather than fusing complex datasets to machine-learning algorithms.

This *ad hoc* attitude to cybernetics is both an expression of dissent from the rigorous and institutionalised expressions of the (trans-)discipline (which Pickering associates more so with American cybernetics rather than its British counterpart) but is also well within the spirit of cybernetics (Pickering, 2010). To again paraphrase Beer's famous dictum, there are no right answers, only models which are more or less useful in effective organisational thinking and

design (Beer, 1966). Cybernetics, and the language through which it is expressed, should itself be dissented from, undermined and re-appropriated in whatever ways are most appropriate for the domain to which it is applied. In the messy domain of democracy, the most effective uses of cybernetics will often mirror its hodgepodge, off the cuff, messy forms of expression.

8.3.2 Cybernetics as instrument, not as scripture.

Cybernetics, considering the above quote, is not a 'right answer' but a family of patterns, models, or tools for understanding organisations, each of which might be more or less useful in specific circumstances. To add to Beer's mantra, cybernetics may be more or less useful depending on the *particular way* in which it is contextually utilised. Cybernetics is more like a set of tools than to a single model, and each of the tools which it is made up of can be used in all manner of ways, some of which can fly in the face of their conventional and originally intended uses. Cybernetics understood in this way should be used in whatever ways most directly aid its (democratic) goals, as an instrumental set of patterns for understanding with no prior presumptions about its 'proper' form of expression.

Understood in this way it is clear why some of the members of Cloughjordan, who wanted the VSM to be *"written in tablets of stone"*, approached the subject in a wrong-headed way. Cybernetics is not a scripture to be followed, but a tool to be used in whatever way best fits the task to which it is applied (and to be ignored in contexts where it does not). It is a fallible and contingent discourse which may be more or less appropriate in differing contexts and should be re-engineered, defied and dissented from whenever that is the most expedient means by which an organisational context might benefit from its lessons. The religious metaphors which have come up at various points during this thesis should give pause for thought when considering the proper application of cybernetics to democratic organisations. Practitioners and theorists alike should be led to become more down-to-earth, more grounded in the day-to-day, situated environments in which organisation takes place, rather than preoccupied with the

heavens above, with the high and mighty cybernetic *"point of view"* which dictates a proper course of action to the dismissal of alternatives (see section 4.4.1).[116] This is not to call into question the invariance of the VSM or cybernetic concepts in general, but to remember that despite their invariance, contextual sensitivity is required for cybernetics appropriate application (see section 5.3.4). The model, as Walker said of his initial work with the model at Suma is *"a bit of an irrelevance"* in and of itself, rather it is its contextual appropriateness which makes it worthwhile. As Hilder reminded us, the theoretical promise of cybernetics is not enough to justify its use, rather *"you have to take responsibility for the viability of what you're doing"* (Hilder, 2019). Cybernetics does not provide a scripture to be followed, but a toolset to be utilised when appropriate and in whatever way is most expedient to the purposes of the group which uses it. Just as often as not, this will take the form of dissenting from cybernetic convention, defying its teachings and presumptions, or hacking its technologies for the benefit of the demos.

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[116] This down-to-earth approach to cybernetics is in some ways exemplified by Walker and Espinosa's experiments and approaches with the subject. Walker's introduction of the model to Suma and Espinosa's (along with her students') implementations of the model in various ecological communities are indicative of approaches to cybernetics which sideline its 'high' theoretical elements in favour of grounded, down-to-earth articulations of the discourse (see section 6.5).

8.4 The theatre of democratic cybernetics

The preceding two sections sought to show how the concepts of low cybernetics and spaces of dissent are interwoven with one another, implied by one another and each dependent on the other to thrive. Rather than elaborating the relationship between these two concepts further in theoretical terms, I will instead show how they relate through the metaphor of theatrical performance and the collaborative cooperation upon which performing is based. This will show how my two key research outcomes interact with one another in a more situated, grounded sense, and will, I hope, paint a picture of how low cybernetics and dissensual spaces relate to one another in more visual and imaginative terms; providing a picture to supplement the above stated arguments regarding how these two concepts interact with one another.

8.4.1 The theatre and the stage

During this research project I have visited several sites of democratic performance, sites in which organisations enact expressions of democratic practice, and organisers performatively dissent from those practices, opening new possibilities for things being done otherwise. One of these varied stages, the one which I was most directly involved with myself, was my work at HG. During a previous chapter I outlined the rough organisational structure I devised to make sense of HG's decision-making practices, which visualised our commitments to both consensus-based decision-making, on the one hand, and autonomous independence on the other (expressed through the language of mandates) (see section 5.3.5). The 'transparent information space', inspired somewhat by what I had observed at PK, was understood as a *"domain of transparent discussion and information sharing"* which determined *"the boundaries between both our individual autonomy and our collective consensus process"* (see section 5.3.5). As a result of this model being devised earlier in the development of my thesis, however, there was a notable omission from my description of this mediating space (and my

thinking at the time when it was devised): it was characterised as being a space within which *agreements* could take place and be facilitated, whereas a sensitivity to the role of dissent remained absent from my description and our discussions at the time. While such an omission cannot prevent dissensual activity from taking place (as was emphasised above) it did result in both (1) an incomplete characterisation of HG's organisational structure and (2) a failure of our group to explicitly account for the role and value of disagreement within our organisational activity.

The *"transparent discussion space"* which HG conceived itself as was, in practice, situated during our group Zoom calls, on our WhatsApp discussions, or during our (unfortunately quite infrequent) face-to-face meetings. Spaces such as these can be understood as stages upon which organising is performed, and like the other organisational spaces I discussed here, like PK's forum, CK's use of Notion, and Suma's deliberations on Loomio, these stages afford different opportunities and constraints to organising depending on how they are constructed and used. [117] They afford more varied or more limited interactions, and different forms of interaction, depending on the way in which they are used and misused by those who act upon them. Such stages might be conducive to decision-making and expressions of dissent (despite its significant limitations, PK's forum has proved itself capable of staging the collective's performance for many years). Some, like WhatsApp (or similar messaging apps), are hopelessly linear and hardly lend themselves to either agreement or its opposite, while forums like the one used by PK are so open to that they allow for either, while being quite unrefined, messy, and undirected at both. Each of these spaces can be seen as a different kind of digital stage upon which organisational performances occur.[118] Some stages afford more inbuilt tools

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[117] Not to mention the physical spaces which have unfortunately played only a small role in these findings due to the impact of Covid on my research (discussed during section 3.8.6).

[118] Again, these stages need not be digital but have been during this project due to the context in which it was conducted.

to contribute to the performance, like the lighting, smoke machines or trap doors on a stage, while others are more bare bones. Groups with a particularly strong rapport with one another can produce compelling theatre even within a cramped and linear space, but most rely on the tools afforded by the theatrical space to supplement the performance and bring it to life (as was emphasised by Cottam above (see section 6.4.6)) (Cottam, 2018).

8.4.2 The performance

Not only does the stage itself impart opportunities and constraints, but the intentions and goals of the performers also shape the way they collaborate together. Their performance might have end points they want to achieve or premises from which the performance emerges. Such guidelines of shared direction are like the heuristics which guide organisational activity: a premise to begin the scene; key themes which the discussants might return to; and so on. Whatever the case, democratic performers do not simply follow a script, a formula, an algorithm, or recipe, but *improvise* their interactions together. Actors within the theatre of democracy work together via off the cuff remarks, going off script, creating tangents and diverting from the most obvious path. This improvisational form was central to the ways in which PK worked and HG tended towards, and although CK seemed to put more emphasis on process and structure in their work, there is a deeper sense in which collaborative organising is fundamentally oriented around improvisation and adaptation. Democratic governance cannot be reduced to an algorithm or set of logic gates unless it is faced with only the most well understood problems. Whenever faced with the unexpected and novel, democratic organisers have no choice but to adjust their trajectory and adapt to the situation at hand.

The improvisational performances which organisers upon the democratic stage dramatize can be characterised in a few ways which relate to the core findings of this research. On the one hand, these diversions can be understood as expressions of *dissent* from the established trajectory of organising. They change the path the group treads and in so doing they cut certain

possibilities off while revealing others anew. They might part from the direction suggested by an individual or the group and reintroduce uncertainty into the actor's performance. This uncertainty brings with it danger, but also the originality, inventiveness, and personality which structure alone can only imitate. Dissensual departures from the group's trajectory might be microscopic and momentary or monumental and permanent, and often which one will not become clear until much later in the performance. HG's discussions about how to structure ourselves according to cybernetic principles, and how others might do the same, was one such diversion which snowballed into the development of an entirely new project, and could only have emerged out of an open conversational space which allowed for not only the free exploration of a shared problem (which began as the S2 project), but also an openness to the mutation of that problem into new and unexpected forms (as the Hive project emerged). This was a particularly impactful, and therefore notable diversion from our original project, but countless other tangents and disagreements emerged during our meetings on a regular and recurring basis, as a day-to-day outcome of our collaboration together.

On the other hand, the comments, call-backs, and improvisational style of interactions on the stage of democracy can be understood in terms of what I have called a *low theoretical* approach. Good improvisation requires a sensitivity to the language and norms of the organisers, even when that sensitivity is used as a means of subverting those norms or of using the language of the group in ways which defy expectation. Despite its sometimes-dissenting character, improvisational speech still needs to be understandable, easy to bounce off, add to, and relate to by the other performers, at least as far as it hopes to affect the behaviour and perception of collaborators. Irrespective of being concerned with invoking dissent or consent, democratic performance should be articulated in terms which are easily understood by the performance of the group, even as it diverts its path. This was very much the attitude we tried to embed in our use of cybernetics at HG, indicated by Lauren's earlier remarks that cybernetics constituted "*a*

heuristic of how we should operate", and although in some instances we failed to bring the best out of that shared language and articulate it in 'low' terms, our failures were often as informative as our successes.

8.4.3 Directing democratic performance

With the metaphor of the *theatre of democracy* in mind as an indication of how spaces of dissent and low cybernetics relate, I return to the question of governance, or to keep in the spirit of our theatrical metaphor, the role of *direction* upon the democratic stage. To put it another way: on the democratic stage, where there is no 'director' - no central coordinator controlling how the performance plays out - what directs the actors towards a successful performance in which they are all equally able to participate? This research has suggested two answers to the question of organisational performance without central leadership, the first of which can be more succinctly understood as the possession of a shared language between the performers which can be readily understood and used by all of them. A 'low' easily followed language which prioritises *participatory clarity* provides a framework for call and response, bouncing off one another and running with ideas. The second concerns the stage; the arrangement of the space upon which the action takes place. The stage is not only the space through which the language of organising flows but is also where the performers find their rapport and divert their attention as their patterns of interaction change.

Both key factors to maintaining effective and democratic self-governance which have been explored here are deeply dependent on a sense of mutual trust, rapport, and generosity. Developing such a culture of respect and mutual interdependence is essential for members to feel able to take risks, nurture strong relationships and to both form and bend rules in ways that allow the organisation to both adapt and remain cohesive. Forming and retaining a culture of trust, as well as both producing spaces and ways of speaking which are welcoming, inviting, and conducive to forming strong bonds, are the deepest necessities for effective democratic

organising, this research has found. Therefore, the formulation of democratic cybernetics should proceed from this starting point and orient itself around the formation of spaces and language which might assist in the development of an atmosphere and culture of trust.

8.5 Summing up the relationship between low cybernetics and dissent

While my discussions of low cybernetics and dissensual spaces emerged relatively independently of each other and to some degree were formed from the analysis of different organisations (the latter mostly emerging specifically from an analysis of PK's democratic forum), I have here discussed the mutual dependence of each of these concepts on one another and explored their resonances and overlapping tendencies. I explored how both concepts are implied by and reliant on the other to thrive, and subsequently explored the interwoven relationship between the two through the metaphorical exploration of *democratic theatre* as a way of bringing together the use of theatre, staging and performance during multiple points of this far-reaching study. I also considered the resonances between the two concepts in situations where repurposing, hacking, re-engineering, and *ad hoc* solutions are found.

As a final resonance between these two concepts, however, I finally frame them as two different but complementary techniques by which the technocratic tendencies of cybernetic governance can be undermined and actively resisted. The technocratic impulse of cybernetics can be reformulated, hacked, subverted, reappropriated, and mutated into language more relevant for democratic participants. Its technical and unapproachable basis can be uprooted and replanted in soil more conducive to radically democratic ends. Second, the facilitation of spaces in which dissent from technocratic governance is not just possible but positively encouraged is (1) a means of directly opposing technocratic governance and the centralisation of power but is also (2) a way of developing an organisational culture which is more creative, adaptive, and sensitive to the insidious possibility of non-democratic governances' re-emergence. Low cybernetics is a means of developing a shared language capable of dissenting from the high theory of cybernetics and its subsequent exclusionary implications, while spaces of dissent are facilitated, in part, through the development of a folk language which is commonly understood. Both these techniques can be understood as interwoven means by

which cybernetics becomes understood in more democratic, egalitarian terms, while at the same time resisting, undermining and perhaps even "*dissolv*[ing]" cybernetics' problematic interrelationship with technocracy (Beer, 1993, p25).

8.5.1 Key contribution from the chapter

This chapter has shown the interrelationships between low cybernetics and spaces of dissent. I have shown that each one is dependent on the other to be effectively sustained in democratic organisations. While PK show that spaces of dissent can be sustained without reference to cybernetics, the kind of down to earth, accessible language which low cybernetic advocates is required for dissensual self-governance to be effectively facilitated. On the other hand, I have shown that low cybernetics is itself a way of dissenting from conventional managerial cybernetics. In several ways this project dissents from cybernetic convention with the purpose of productively contributing to the subject continuing development. The use of the metaphor of 'democratic theatre' staged the key findings from this project and demonstrated their relationship and overlaps with one another.

Chapter 9: Concluding thoughts – towards a low cybernetics of dis/agreement within democratic spaces

"Institutions are self-contained cells for each of which the nucleus - the organising principle called the cytoblast - is management itself." (Beer, 1975, p131)

"There is simply no manager identifiable in an ecological or neurological system" (Beer, 1975, p106)

9.1 Summarising participatory cybernetics

During this research project I have explored various perspectives within and adjacent to the discourses of cybernetics and democracy as a means of exploring their inter-relations and divergences. In doing so I have developed an understanding of their resonances and tensions, while disrupting existing understandings of their relationship in the interest of taking seriously their failures and subverting conventional ways in which they have been interpreted. From the outset I treated both subjects as wide-ranging discourses made up of various practices and forms of articulation. I treated cybernetics not so much as a scientific discipline but as a trans-disciplinary discourse made up of texts, materials, models, and objects which exceed the remit of the sciences alone. This allowed for a diverse exploration of the through-lines and resonances between one field and the other and led to the emergence of unexpected outcomes of the study. Along with this open-ended, discursive investigation came the embrace of failures, messiness, and unresolved troubles, which I approached not as shameful, unprofessional, or unproductive, but as essential components of original research and the means by which dominant interpretations can be superseded and drawn into question. Messiness was key to the research in part because it is an inevitable and permanent aspect of complex cybernetic systems, whether the uncountable failures and mutations essential to biological evolution or the mess of patches, edits and *ad hoc* fixes which are inevitable in the design of technological systems. Moreover, I have argued that messy, experimental systems are commonplace in the language and practice of democratic groups and can have inadvertently productive outcomes. To conduct this research, I gathered numerous forms of data including academic sources, interviews, digital archives, forums, and observations from online platforms used by democratic organisations. I also drew from my own experiences implementing these ideas within a small organisation I was working with during the preliminary stages of its development, providing a PAR dimension to the research. By reviewing this myriad of data

sources, I began to develop a conception of the space between democracy and cybernetics, forming hypotheses and impressions which I noted, developed, and discussed with participants. This led to an iterative methodology, the outcomes of which developed and changed as my research took shape around the results of my investigations.

Emerging from the research were a variety of outcomes which hope to contribute to the future development of democratic cybernetics. Two key concepts emerged in the forms of *low cybernetics* on the one hand and *spaces of dissent* on the other. The former constitutes a means of rethinking how cybernetics is articulated in democratic spaces, taking on a more commonplace, contextually embedded expression which prefers to speak in terms which are specifically relevant to, or developed by, the practitioners in question. This I contrasted to the tendency of cybernetics to rely on the technical scientific vocabulary, which is most appropriate for expert audiences who do not make up most democratically governed spaces. Low cybernetics emerged as a result of observing what I called *heuristic language*, in which short-hand forms of communication, often emerging out of organisers' situated experiences, play a significant role in democratic communication and side-line the use of technical and surgical language within participative contexts. Second, I argued that democratic cybernetics has focused on the development of decision-making processes and means of establishing consensus (or consent) between participants. This has led to the implicit treatment of dissent as a harmful and pathological means of participating in organising, or at least as a mere instrument for developing better agreements. Against this I reflected on disagreement on its own terms, as a form of interaction which can be creative and generative in democratic contexts, opening new avenues of invention which consensus-making can sometimes undercut in the interest of expediency and reinforcing dominant narratives. Providing space for dissent also provides a means of resisting, undermining, and bringing into question the priesthood-like knowledge inequalities which cybernetics tends towards. Drawing on a Rancièrian reading

of democracy and an investigation of PK's digital forum I argued that there is immense value to be found in producing spaces in which productive dissent can emerge and be built upon by participants. Much like other paired concepts in organisational cybernetics (such as centralisation and decentralisation, or verticality and horizontality), an attendance to both consensus and dissensus in democratic contexts is likely to produce a more holistic and balanced conception of self-governance within democratic cybernetics, while also opening those organisations up to creative disruptions capable of inventively responding to perturbations and thinking established conventions anew.

These two key outcomes can be understood as means of reimagining managerial conceptions of organisational cybernetics, thinking anew how participatory governance might be conceptualised through a cybernetic lens. The facilitation of spaces of dissent in organisations like PK produce a context in which centres of power can be brought into question vocally and publicly by members of the organisation, undermining their capacity to make decisions on behalf of the organisation's membership. Heuristic language can be thought of as directly oppositional to bureaucratic and managerial approaches to governance, since managers tend to recoil from organisational approaches based in the improvised, experimental, untested, and piecemeal, preferring the formulation of standardised protocol and rigorous policy.

Two other major perspectival shifts have emerged from this research, which indicate futures of a democratic cybernetics. First, established academic work on the application of cybernetics to organisations have often treated it as a *technological and scientific* perspective, whereas I have treated it as a multifaceted *discourse* in need of relevant articulation in terms understandable to the audiences to whom it is conveyed. Second, it has tended to be applied as a way of thinking about and refining organisational *process*, whereas I have drawn attention to the *spatial* dimension of both cybernetics and democratic organising, suggesting that cyberneticians and organisers think about the subject in terms of how it might facilitate

organisational spaces in addition to refining organisational process. Each of these core re-framings of cybernetics helps to envision how future applications of the subject might become more enthusiastically and viably implemented within democratic organisations, avoiding the inaccessibility and technicality which has sometimes led to practitioners developing fatigue and even hostility towards it.

9.2 Gaps in the literature

We might now return to the academic contributions I discussed at the outset of this project to further consider the impact of this research on the development of a democratic cybernetics (discussed during 2.1.1). The findings I have formed throughout this text contribute to the creation of a participatory and non-managerial conception of organisational cybernetics on many grounds.

First, I have shown that there are significant challenges to the effective communication of cybernetics to democratic organisations and offered considerations regarding the reasons for these difficulties emerging. This not only related to the difficulty of cybernetics' inaccessible language, but the consequences that this form of language has on the development of unequal social relations, resulting in *fatigue* on the one hand and *knowledge priesthoods* on the other.

Second, I drew out two key tensions between the subjects of discussion in this research, indicating how theorists and practitioners might better understand their complex relationship alike. Specifically, I noted two pairs of inter-related tensions, which I called *cybernetic intuition* and *democratic pedagogy* on the one hand, and *invariance* against *contextuality* on the other. These tensions were not introduced as a means of claiming their resolvability, but rather as ways of encouraging their acknowledgement so that future research can account for their persistence and push cybernetics towards forms of articulation with greater *participatory clarity*.

Third, I articulated a means of understanding how the challenge of communicating cybernetics to democratic audiences might be conceived of and practised more effectively, taking a significant step towards developing a properly participatory conception of cybernetics, capable of incorporating the voices of democratic practitioners irrespective of their fluency in the language of cybernetics. This took the form of *low cybernetics.*

Finally, I considered the way democracy has been conceived of in the current cybernetic canon concerning participatory organising and expanded it to account for a more holistic conception of democracy. In so doing I drew attention to a means by which the undemocratic tendencies within cybernetics can be subverted and undermined. This subversive notion of democracy also opened this research up to emphasising the spatial dimension of cybernetics, arguing that a balance be drawn between conceptions of democracy as both consensual and dissensual.

9.3 Learning through failure

From early on in my research, messiness and failure became central components of the project, understood not as indicative of something pointless or unproductive, but that which leads to the creation of novelty and inventiveness in the face of safe and conservative mediocrity. This embrace of messiness and failure not only gave my project more modest boundaries, allowing me to reveal tensions without the expectation of cleanly resolving them, but also led to the production of more original and significant contributions to the literature. It was in this vein that my interest in heuristics and Halberstam's work on low theory became increasingly relevant, offering the adoption of imprecision, incompleteness and messiness rather than grandiose attempts to conceal life's inevitable failures with seemingly tightly knit and frictionless theories (Halberstam, 2011). In much the same way, during the production of cybernetic systems (of whatever kind) it is often their adjustment, patching and revision after they have been initially released, switched on, or committed to paper that reveals the most fundamental lessons about the ways in which they behave. Three key shifts in my project initially felt like failures, diversions or corrections of wrong turns but later became integral elements of the project's identity. Without these shifts in perspective my findings could not have taken form, or at least would have emerged in less contextually appropriate language which, as I have shown during this research, is often a decisive factor leading to the acceptance or rejection of a set of ideas.

First, my perspective during this project shifted from understanding cybernetics as a scientific discourse which could introduce a rigorousness to democratic organising, bringing coherence and stability to democratic organisations, towards a discursive approach to cybernetics as a way of speaking and interpreting the world which needs to be re-imagined and re-conveyed in language appropriate to democratic contexts. Closely associated with this was the shift from seeing my conception of *low cybernetics* as a process of variety engineering (see section 6.2).

Instead, conveying low cybernetics in simple, direct, common language re-framed the idea with greater ease and demonstrated how a rigorous argument could be re-articulated in a context more relevant to the audience to whom it is directed. Finally, there was a shift in the way in which *cybernetic intuition* was understood in my project, from being introduced as a simple observation of how cybernetic understanding is distributed, to seeing it as a tension within democratic cybernetics which should be countered through its re-articulation in more accessible, common-sense terms.[119] These three shifts constituted central moves in my research which brought my findings into focus, allowing what appeared to be errors to be reinterpreted as valuable and productive perspectival shifts.

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[119] In other words, the inequality of cybernetic intuition was not a natural or inevitable characteristic of cybernetics but a product of the vocabulary through which it was communicated, and by shifting that vocabulary towards more down-to-earth terms one could counter the seemingly spontaneous unevenness of cybernetic understanding.

9.4 Key insights from the project.

Throughout the project I have pointed towards the key contributions which each findings chapter has provided. Here I will briefly refer to a few of the major contributions which emerged from the project at both a theoretical and empirical level.

Empirically the project has shown the mixed outcomes of emphasising scientific, rigorous cybernetic language within democratic organisations, and has demonstrated the need to: (1) use contextually appropriate language within organisations to ensure that participation remains equally accessible, and (2) the necessity of finding ways to reinforce and sustain shared languages and models, so that the use of cybernetics can remain effective over time with minimal intervention of experts. My investigation of PK showed that consensual and dissensual ways of organising are not only compatible but can be used to mutually reinforce one another towards more adaptive and sustained responses to unforeseeable perturbations. PK's reliance on open spaces of collaborative activity, more so than on tightly coordinated procedures and processes of governance, illustrate the spatial component of democratic organising, and the creative, distributed problem-solving which can emerge within such spaces, given the appropriate reinforcement of trust and assumed equality.

At the level of theory two key outcomes from the project emerge. The first, *low cybernetics*, shows that the language of cybernetics needs to be retranslated and remoulded into more accessible and contextually relevant forms for it to be effectively utilised within democratic organisations. The proposal of low cybernetics aims to provide a way of thinking which might help organisers, cyberneticians and designers to think about systems and cybernetic practices in ways which enable greater participation and understanding from democratic participants, thereby directly confronting the technocratic and expert driven tendencies which cybernetics has been accused of. Second, *spaces of dissent* shows that cyberneticians and those involved

in democratic organisational design ought to carefully consider the role of dissensual spaces, and not just consensual processes, in the development and design of participatory organisations. The project has shown that thinking design in terms of space, rather than focusing solely on process, is vital for democratic organisations to maximise their adaptability and distributed problem-solving. I have also shown that accounting for conceptions of democracy which emphasise dissent and disagreement, as well as their more appraised opposites, is vital for democratic cybernetic organisations, both at a theoretical and empirical level. The facilitation of dissent also amounts to a powerful confrontation with the forms of hierarchy and inequality which can emerge from any social organisation, particularly those which rely on expert knowledge.

Each of these key project outcomes, then, amount to means by which the tendencies towards hierarchy and technocracy, which are threats within both cybernetic theory and democratic practice, can be undermined, resisted, and even overcome. The continued exploration, elaboration, and implementation of these findings can therefore contribute significantly to the continued development of organisational cybernetics within the domain of democracy and participatory collaboration.

9.5 Future avenues of research

Finally, I can reflect on the trajectory of studies in democratic cybernetics moving forward and consider how this research might be further developed. Each of my core research outcomes themselves constitute points of departure for future research and democratic cybernetics' practical deployment.

9.5.1 Developing low cybernetics

First, low cybernetics is best elaborated by producing further experiments in low cybernetics. This may be done by developing the kinds of low theoretic heuristics and heuristic language which conveys effective organisational practice in accessible cybernetic terms, or which re-frames cybernetics into language more readily practised by democratic participants. More valuable than a theoretical elaboration of low cybernetics is its practical embodiment in guides, tools and practices which might make democratic organisations more viable and effectively democratic.

Despite the priority of producing low cybernetics in practice, there are further questions which could be asked regarding its possible contours and forms. During my discussion of low cybernetics, I discussed the benefits of rendering cybernetics 'invisible' when considering how it might be integrated more effectively into democratic contexts, and later emphasised the importance of retaining concreteness in its articulation despite this. With this emphasis on retaining concreteness in mind, one future line of inquiry might be to ask how cybernetics might gain greater visibility and tangibility while avoiding the inaccessibility issues I discussed throughout these findings. While this line of questioning would undoubtedly reveal new difficulties and re-instigate some of the troubles which the proposition of 'invisibility' sought to alleviate, it might also offer ways of communicating cybernetics anew if done effectively. In more practical terms, my project's earlier consideration of how one might go

about producing a set of democratic, cybernetic 'practical heuristics' (as was noted during section 3.3.4) is one way of thinking about how cybernetics might become visible in ways which facilitate its greater understanding rather than obscuring it from some participants.

9.5.2 Development of dissensual space facilitation

Throughout the latter half of this project, I have suggested three proposed requirements for the facilitation of dissensual spaces and have emphasised the vital importance of nurturing a sense of mutual trust and feeling 'a part' of the organisation in question (condition 1&2 discussed in Findings 4, 3 discussed in the previous chapter). These minimal conditions, however, could be further investigated to confirm their sufficiency, leading to other underlying criteria for dissensual spaces being elaborated. A development of this kind would require the investigation of a wider variety of organisations which, like PK, have produced organisational environments in which dissent is encouraged and freely expressed. Future research might also enquire as to the most effective means of facilitating and protecting these criteria, and the means by which they can remain secured for the benefit of the organisation and its members over the long term.

Further research might also ask how best to facilitate the production of spaces of dissent and consider the difficult question of designing stages upon which dissent can thrive. This would involve a cybernetic analysis which departs from its usual orientation towards the production of processes of decision-making, and necessitates that designers think in spatial terms, providing a stage on which creativity can emerge spontaneously and unexpectedly, rather than curating and codifying the conditions in which action can take place. Such spaces necessitate the possibility of their own undoing, and therefore rest upon trust being put in their user's competence and intelligence.

9.5.3 Democratic cybernetics beyond the confines of this research

Beyond the development of the key concepts which have emerged from this research, further work could be done into dimensions of democratic cybernetics which exceed the boundaries of this research or divert from its key points of focus. Analyses of face-to-face organisational spaces might be investigated in later studies. Digital spaces remained the focus of this study due primarily to the onset of the Covid pandemic early into this research development, and considerations of physical organisational spaces would help to further develop and substantiate the outcomes of this study. Additionally, investigations into organisations of different scales and within sectors not included in this study would evidence that the outcomes of this research are not merely relevant to the organisational contexts I have considered, but to democratic organisations invariably. Finally, research could be conducted into considering how *low cybernetics* and *spaces of dissent* operate in the inter-organisational domain, as ways of speaking accessibly across organisations with a shared inter-organisational language, and as ways of understanding how spaces could be formed between them which might allow for the formation of both agreements and disagreements conducive to their common interests.

These are, of course, only a couple of areas of inquiry to further develop the conception of democratic cybernetics I have advanced during this research. It is likely that future contributions to the subject will continue in trajectories which a researcher such as myself is unable to foresee. Although I have suggested points of departure and lines of flight during this project, it is up to others to expand upon these beginnings in their own ways, or take entirely different paths, and in doing so produce a body of work bigger than any single contributor's efforts. To repeat the sentiment Uwe articulated in a previous chapter,

> *"It is not at all necessary to find every solution to a dilemma yourself. The others are also clever. Often it is enough to free up the space for a good solution."* (Lübbermann, 2021, p61)

Appendix 1: Dan's Bike VSM

The Viable Systems Model (VSM) was developed by a fellow called Stafford Beer as a branch of the field of Cybernetics. By looking at lots of different natural systems he was able to identify a framework of interrelating principles that were common to all the systems he was observing and that therefore he concluded to be Universal. This leads on to an idea called Recursion, which means that the same pattern recurs at lots of different levels and can therefore be found in whatever aspect of Life is being viewed at the time. Think of a tree, its trunk grows out of the ground, limbs grow out of the trunk, boughs grow out of the limbs, branches grow out of the boughs etc. until the twigs that form on the outer reaches of the canopy. All of these different levels of growth follow the same essential pattern and resemble each other in miniature. This Fractal system is what we mean by Recursion. The benefit to us of Recursion is that once we can formulate the model, the basic underlying pattern, we can apply that model to our own circumstances at any level so that we can operate in harmony with Nature. Thus Stafford Beer outlined a set of relationships that he saw were both necessary and sufficient for any organism or organisation, large or small, to be Viable.

To maintain Viability a system must be kept in Balance, both with itself and with the constantly changing external Environment. It's like riding a bicycle, as you go along you maintain your balance by making constant adjustments to your steering in order to keep yourself upright. If you're good at cycling this process will be easy and almost imperceptible, but if you've just started learning then you will probably find balance hard to achieve. Many organisations can be somewhat Wobbly as they try to organise themselves without the steadying Parental hand of the old Hierarchical Command-and-Control systems.

Balance also has to be maintained regardless of the type of terrain that we wish to cross. Most of us follow the Mainstream because it is a nice flat well-surfaced road that is easy to cycle on. Unfortunately it is clear that it has now become the Road to Destruction and that we must find another Way if we are to survive. Inevitably this means we encounter rougher ground and keeping our Balance becomes more difficult. As the ground becomes more varied then, we have to pay more attention and respond by making more complex adjustments in our cycling manoeuvres. This principle is referred to as 'Matching Variety' in the language of the VSM

and means that we must match any changes in the variety (or complexity) of our environment with equally varied responses from our own organisation.

The Model itself is broken down into different spheres of involvement, each of which performs a different but complementary function in the overall scheme. These are numbered 1 to 5 and it is this language that you will hear most often. "Our system 3 is out of balance with our system 4, so our system 1's are not clear and system 2 is getting overloaded" is the kind of thing that you might hear from someone conversant in VSM-speak. It seems daunting, but you soon get the hang of it and it allows us to discuss our organisation in strictly functional terms without it becoming "Wilma and Fred can't get their act together so now Barney and Betty are squabbling and it's doing my head in". Problems that seem to be about personalities may often in fact stem from systemic imbalances, and it's best to deal with them in neutral systems terms.

System 5 is what we are about, our identity. It is the meaning of why we are doing what we are doing. System 5 is the sphere of Policy and has a twofold aspect. On the one hand, an organisation has to decide who makes the policies and how far the process of involvement stretches. The other aspect of system 5 is in making sure that these policies are held to. Someone has to take on the task of making sure that the whole thing stays on track according to what has been agreed as Policy.

In our cycling analogy System 5 encompasses what philosophy to take (it's a nice day, let's take a scenic route), and our risk management (going safely and slowly, rather than fast and reckless). System 5 also ensures we are on track (is this the way to the park, or did I take a wrong turn?). This is not a static fixed situation and what we do can change at any time (if it starts to rain, we might decide not to go through the park after all) – although we are still working within the same System 5 policies.

System 4 is the sphere of Navigation. It constantly watches the external Environment to monitor changes that need to be adapted to and maps out the way ahead in a practical manner. It also has an eye to the future and is sometimes called 'Outside and Then'. It is both the eyes and ears of the organisation and the faculty that charts the route.

On our shopping trip, System 4 watches out for threats or opportunities on the way (a bag of chips in the road, that 4x4 reversing out of its driveway, the smell of fresh bread from that little bakery) and plans our responses (swerve around the chips, let the 4x4 out, stop to buy lovely bread). It has autonomy within its mandate, but alerts System 5 when Policy decisions are needed (it looks like it's going to rain, and I can get home if I cycle very fast, is this OK?)

System 3 is the Heart of the internal organisation and looks after its internal dynamics and the flow of resources around the whole scheme, optimising efficiency by encouraging synergy in the operational parts. It focuses on keeping the organisation working effectively and facilitates the operational elements in their endeavours. System 3 is "Inside and Now" and a perfect compliment to the "Outside and Then" of System 4.

When cycling we need to work within the capabilities of both our body and the bicycle itself. System 3 keeps our muscles fed with enough blood to let them do their job and also makes sure that the chain is oiled, the tyres pumped up etc. and that everything is working harmoniously to maximum efficiency. The needs of System 3 are balanced against the needs of System 4 and this equilibrium is overseen by System 5. System 4 might want to cycle up the hill, but System 3 is feeling quite tired. System 5 makes a policy decision based on the overall picture.

System 2 works alongside System 3 to maintain an even keel and prevent conflicting demands on resources - (there is also a system 3 which carries out occasional information gathering activities, like sporadic checking of the brake-blocks). Imagine Barney from production needs 3,000 euro to fix the Widget machine, whereas Betty from Sales needs 3,000 euro to book a stall at the Widgetworld trade fair. There's only 5,000 euro spare at the moment, so what to do? System 2 provides a mechanism by which a solution can be found without them just going whinging to Wilma the co-ordinator (at System 3) and giving her a headache. We have not had any serious difficulties with System 2 so far, but as the building phase starts and we get a more individual focus we will need to make sure that this system is kept working well. Conflict resolution may then become more important.*

System 1 is called the Operation and is what the organisation actually does, or in other words how it expresses itself in the world. Systems 2-5 are collectively called the Metasystem and provide the necessary support for System 1 to do its stuff. The Operation is divided into several

Primary Activities, which are the main things we are trying to achieve. It has been found that it is usually best to restrict the number of Primary Activity divisions to around 7 as more than this become difficult to handle.

The Primary Activities of our cycle journey might be say A. Getting to the shops, B. Finding what we need, C. Buying it, D. Enjoying the experience…etc. These can also change with time. Fixing a Puncture might become the most pressing Primary Activity for a while, as might Gossiping if we bump into friends on the way

One of the most important aspects of the VSM is the balance between Autonomy and Accountability, which like Rights and Responsibilities can only function successfully in equal measure. When we are cycling along most of our responses are actually autonomic, we don't think about every little adjustment of the handlebars consciously and if it's all going well we may not have to think about very much at all except how nice the day is and how good we feel to be out on our bike. In fact if we tried to keep conscious control over every detail of what we were doing the results would probably be a big heap of bones and metal in the ditch. The key to a smooth-running organisation is to keep as much of the decision making on the level at which it is needed and only to bother the other systems when necessary. The principle of allowing maximum autonomy to 'doers' (ie. those at the coal face actually doing the "primary activity" tasks) is vital if we are not to become bogged down in endless and pointless bureaucracy. The flipside of this though is that we still need to be representing the whole enterprise in any decisions that we might make individually. The integrity of the organisation depends upon us all working together in harmony to further our aims. For this reason it is important that there is a constant flow of information circulating around the whole scheme of the model so that everyone knows the fundamentals of what is going on and can make decisions with the confidence that they are being made in the context of what is truly needed. Not that we want to be lost in a blizzard of minutiae and meaningless details, but that we need to get focussed and necessary information to and from the relevant parts of the organisation as efficiently as possible. If we don't report on what we are doing then how can we expect the company to support us and keep us on track? Equally, if we're not listening to what other parts of the company are saying, how can we represent them? Getting this balance right is the most difficult part of becoming a Viable System.

Eventually we will be cruising along waving and smiling, we might even jump over the bag of chips, just for fun.

Bibliography

Alvesson, M. &. W. H., 2011. *Critical Management Studies, 4 vols..* Los Angeles, CA, USA.: Sage.

Ashby, R., 1970. *An introduction to cybernetics,.* London: Methuen.

Ashby, W. R., 1960. *Design for a brain. The origin of adaptive behaviour.* s.l.:Wiley.

Atzeni, M., 2012. *Alternative work organisation..* s.l.:Palgrave Macmillan,.

Barbrook, R., 2007. *Imaginary futures: from thinking machines to the global village.* London: Pluto.

Barile, S. E. R. P. I. a. S. M., 2018. *Cybernetics and systems: social and business decisions..* 1st edn. ed. s.l.:Routledge.

Barthold, C. C. M. I. M. &. S. J. O., 2022. Dissensual leadership: rethinking democratic leadership with Jacques Rancière.. *Organization, ,* Volume 29(4), pp. 673-691.

Bassett, K., 2014. Rancière, politics, and the Occupy movement. *Environment and Planning D: Society and Space,* Volume 32(5), pp. 886-901.

Bateson, G., 1979. *Mind and nature: A Necessary Unity.* s.l.:Hampton Press.

Bateson, G., 2000. *Steps to an ecology of mind: Collected essays in anthropology, psychiatry, evolution, and epistemology..* s.l.:University of Chicago Press..

Bednarz, J., 1988. Autopoiesis: The organizational closure of social systems,. In: *Systems Research and Behavioural Science, .* s.l.:John Wiley..

Beer, S., 1965. *Cybernetics and Management..* London: : English Universities Press Ltd..

Beer, S., 1966. *Decision and Control: The meaning of operational. The meaning of operational research and management cybernetics.* s.l.:Wiley.

Beer, S., 1975. *Platform for change.* s.l.:John Wiley & Sons.

Beer, S., 1979. *The heart of enterprise..* Chichester:: Wiley..

Beer, S., 1985. *Diagnosing the System for Organizations.* London and New York.: John Wiley.

Beer, S., 1993. *Designing Freedom.* s.l.:Wiley.

Beer, S., 1994. *Beyond dispute: the invention of team syntegrity; the managerial cybernetics of organization.* New York: Wiley.

Beer, S., 1994. *How many grapes went into the wine,.* s.l.:Wiley Press..

Beer, S., 1994. Towards the Automatic Factory,. In: *How Many Grapes Went into the Wine? Stafford Beer on the Art and Science of Holistic Management.* New York: Wiley,.

Beer, S., 1995. *Brain of the firm,.* Chichester: : John Wiley..

Beer, S., 2002. What is cybernetics?.. *Kybernetes.,* Volume Vol. 31 No. 2,, pp. 209-219.

Beer, V. &. L. A., 2019. *Stafford Beer the Father of Management Cybernetics: Big Data Analysis, Including Cybernetic Glossary..* s.l.:Fondation Oroborus..

Bernays, E. L., 2005. *Propaganda..* s.l.:Ig publishing..

Bingham, C. B. &. E. K. M., 2011. Rational heuristics: the 'simple rules' that strategists learn from process experience.. *Strategic management journal, ,* Volume 32(13), pp. 1437-1464..

Black, B., 1986. *The abolition of work and other essays.* Port Townsend, WA: Loompanics Unlimited.

Bockelbrink, B. P. J. &. D. L., 2021. *The Sociocracy 3.0 Resource Library.* [Online] Available at: https://sociocracy30.org/resources/ [Accessed 19 10 2022].

Bosteels, B., 2014. Archipolitics, Parapolitics, Metapolitics. In: *Jacques Rancière: key concepts..* s.l.:Routledge..

Brand, S., 1976. *For God's Sake, Margaret! Conversation with Gregory Bateson and Margaret Mead.* [Online] Available at: https://sites.evergreen.edu/arunchandra/wp-content/uploads/sites/395/2018/05/BatesonAndMead.pdf [Accessed 07 10 2022].

Brekke, C. &. J. E., 2019. *Disassembling the Trust Machine, three cuts on the political matter of blockchain.* s.l.:Doctoral dissertation, Durham University.

Bridges, L. E., 2021. Digital failure: Unbecoming the "good" data subject through entropic, fugitive, and queer data.. *Big Data & Society,* Volume 8(1).

Brown, A. M., 2017. *Emergent strategy: Shaping change, changing worlds..* s.l.:AK Press.

Buck, J. V. S., 2012. *We the people: consenting to a deeper democracy: A guide to sociocratic principles and methods..* Washington DC: sociocracy.info.

Bula, G. &. E. R., 2012. Governance and inclusive democracy.. *Kybernetes,* Volume 41(3/4).

Cantu, J. L., 2019. *Why Capitalism beats Socialism: a cybernetics based explanation,* s.l.: Youtube.

Capra, F., 1996. *The web of life: A new synthesis of mind and matter.* London: Flamingo.

CAS, C. A. S., 2019. *Non-hierarchical organisations and organic growth.* [Online]
Available at: https://www.youtube.com/watch?v=QN51_DUs7ls [Accessed 22 08 2022].

Chambers, S., 2012. *The Lessons of Rancière,.* Oxford.: Johns Hopkins University, .

Chambers, S. A., 2011. Jacques Rancière and the problem of pure politics.. *European Journal of Political Theory, ,* Volume 10(3), , pp. 303-326..

Chambers, S. A., 2014. Police and Oligarchy. In: *Jacques Rancière: key concepts..* s.l.:Routledge..

Clastres, P., 2020. *Society against the state: essays in political anthropology..* s.l.:Princeton University Press..

Cloughjordan, E., 2021. *About us - The Village.* [Online]
Available at: https://www.thevillage.ie/about-us/ [Accessed 22 10 14].

Collaborative, D., 2022. *Democracy Collaborative.* [Online]
Available at: https://democracycollaborative.org/john-duda [Accessed 22 11 14].

Common-Knowledge, 2020. *About.* [Online]
Available at: https://commonknowledge.coop/about [Accessed 09 10 2022].

Common-Knowledge, 2020. *Work.* [Online]
Available at: https://commonknowledge.coop/work [Accessed 09 10 2022].

Common-Knowledge, 2020. *Writing.* [Online]
Available at: https://commonknowledge.coop/writing [Accessed 09 10 2022].

Cooke, B., 2003. *The denial of slavery in management studies..* 40(8), ed. s.l.:Journal of Management Studies, .

Cottam, H., 2018. *Radical help: How we can remake the relationships between us and revolutionise the welfare state. Hachette UK..* s.l.:Virago Press.

Coulthard, P., 2013. *Synergy between Sociocracy and the VSM.* [Online]
Available at: https://www.loomio.com/d/qQFpGLRk/synergy-between-sociocracy-and-the-vsm?p=1 [Accessed 07 10 2022].

Cummings, D., 2019. *On the referendum #33: High performance government, 'cognitive technologies', Michael Nielsen, Bret Victor, & 'Seeing Rooms',* s.l.: s.n.

Dammbeck, L., 2003. *Heinz von Foerster, Cybernetics & Constructivism | Lutz Dammbeck [2004].* [Online] Available at: https://www.youtube.com/watch?v=nFgmvLEev0k&ab_channel=FadiAkil [Accessed 07 10 2022].

Deleuze, G., 2017. *Postscript on the Societies of Control..* s.l.:Routledge..

Deleuze, G., 2017. Postscript on the Societies of Control. In (pp. 35-39). Routledge.. In: *Surveillance, crime and social control .* s.l.:Routledge., pp. pp. 35-39.

Denning, S., 2010. *The leader's guide to radical management: reinventing the workplace for the 21st century..* 1st ed. ed. s.l.:John Wiley.

Dignan, A., 2019. *Brave new work: are you ready to reinvent your organization?.* s.l.:Portfolio..

Duda, J., 2013. *Cybernetics, Anarchism and Self-organisation..* s.l.:Anarchist studies, 21(1)..

Duijn, R. v., 1972. *Message of a wise Kabouter.* s.l.:Bloomsbury Academic.

Enteman, W. F., 1993. *Managerialism: The emergence of a new ideology..* Wisconsin : Univ of Wisconsin Press..

Espejo, R. &. R. A., 2001. The state of the state: introduction.. *Systemic Practice and Action Research, ,* Volume 14(2), .

Espejo, R., 2019. *Cybernetics and systems: social and Business Decisions,.* s.l.:Routledge..

Espejo, R. a. R. A., 2011. *Organizational systems: Managing complexity with the viable system model..* s.l.:Springer Science & Business Media.

Espinosa, A. &. D. C., 2018. Complexity management and multi-scale governance: A case study in an Amazonian indigenous association.. *European Journal of Operational Research, ,* Volume 268(3), , pp. 1006-1020..

Espinosa, A. &. K. K., 2008. *Reviewing the Tragedy of the Commons: Environmental Management Systems and Informal Communication Networks..* s.l., Digital Library of the Commons.

Espinosa, A. &. W. J., 2013. Complexity management in practice: A Viable System Model intervention in an Irish eco-community.. *European Journal of Operational Research, ,* Volume 225(1), , pp. 118-129..

Espinosa, A. a. W. J., 2013. *Complexity management in practice: A Viable System Model intervention in an Irish eco-community.,* s.l.: European Journal of Operational Research 225, no. 1 .

Espinosa, A. H. R. &. W. J., 2008. *A complexity approach to sustainability–Stafford Beer revisited..* s.l.:European Journal of Operational Research, 187(2).

Espinosa, A. H. R. &. W. J., 2008. A complexity approach to sustainability–Stafford Beer revisited.. *European Journal of Operational Research,* Volume 187(2).

Espinosa, A. W. J., 2017. *A Complexity Approach to Sustainability: Theory and Application.* 2nd ed., ed. London.: World Scientific Press, .

Fitzgerald, H. S. A. &. E. E., 2021. Messy methods: Making sense of participatory research with young people in PE and sport.. *European Physical Education Review,* 27((3)), p. 421–435.

Francis, S. &. L. M. &. N.-G. Y., 2018. *Dissent: A Creative Practice.* [Online]
Available at: https://issuu.com/chapelartsstudios/docs/dissent_a_creative_practice_-_cas_a
[Accessed 09 10 2022].

Frydendal, F., 2020. *Cybernetics revisited.* [Online]
Available at:
https://www.youtube.com/watch?v=mgROVdVSM0o&ab_channel=SociocracyForAll [Accessed 07 10 2022].

Galloway, A. R., 2004. *Protocol: How control exists after decentralization..* s.l.:MIT press..

Garcia, M. &. P. A., 2014. Social work and netnography: The case of Spain and generic drugs.. *Qualitative Social Work,,* Volume 13 (1).

Gigerenzer, G., 2008. Why heuristics work.. *Perspectives on psychological science,,* Volume 3(1),, pp. 20-29..

Graeber, D., 2013. Some remarks on consensus.. *Occupy Wall Street..*

Grey, C. &. W. H., 2005. *Critical management studies. A reader..* Grey, C., & Willmott, H. ed. s.l.:Taylor & Francis .

Gross, J., 2020. *Stafford Beer: Eudemony, Viability and Autonomy.* [Online]
Available at: https://www.redwedgemagazine.com/online-issue/stafford-beer-eudemony
[Accessed 06 10 2022].

Halberstam, J., 2011. *The queer art of failure..* s.l.:Duke University Press..

Hall, S., 1991. Old and New Identities, Old and New Ethnicities.. In: *Culture, Globalization and the World-System: Contemporary Conditions for the Representation of Identity.* New York: King (State University New York: Department of Art and Art History) .

Hallward P., R. J., 2010. Politics and aesthetics an interview. *Journal of the Theoretical Humanities ,* Volume 8:2.

Hallward, P., 2006. Staging Equality. *New Left Review:,* Volume Jan/Feb 2006.

Hanlon, G., 2015. *The dark side of management: A secret history of management theory..* s.l.:Routledge..

Harper, D. (., 2014. *Etymology of facilitation. Online Etymology Dictionary..* [Online]
Available at: https://www.etymonline.com/word/facilitation [Accessed 2022 12 30].

Harper, D., 2017. *Online Etymology Dictionary.* [Online]
Available at: https://www.etymonline.com/word/trans- [Accessed 07 10 2022].

Hewlett, N., 2007. *Badiou, Balibar, Rancière: re-thinking emancipation..* s.l.:A&C Black..

Heylighen, F., 2011. *Stigmergy as a generic mechanism for coordination: definition, varieties and aspects..* [Online] Available at: http://134.184.131.111/Papers/Stigmergy-WorkingPaper.pdf
[Accessed 07 10 2022].

Heylighen, F., 2016. *Stigmergy as a universal coordination mechanism I: Definition and components..* s.l.: Cognitive Systems Research, 38..

Hilder, T., 2019. *Low Impact.* [Online] Available at: https://www.lowimpact.org/posts/viable-system-model-trevor-hilder [Accessed 07 10 2022].

Hilder, T., 2019. *The Moral Modalities Framework - An Introduction.* [Online]

Available at: https://www.webofwealth.org/2019/11/the-moral-modalities-framework-an-introduction/ [Accessed 09 10 2022].

Holmes, B., 2009. *Escape the overcode: Activist art in the control society..* s.l.:Van Abbemuseum..

Jones, G., 2018. *The Shock Doctrine of the Left..* s.l.:Polity.

Kenny, V., 2007. On the subject of autopoiesis and its boundaries: does the subject matter?. *International journal of General Systems..*

Kirby, P., 2017. Cloughjordan ecovillage: modelling the transition to a low-carbon society.. *Transitioning to a Post-Carbon Society: Degrowth, Austerity and Wellbeing. ,* pp. 183-205..

Kurtz C. F. & Snowden, D., 2003. *The new dynamics of strategy: sense making in a complex and complicated world,.* vol 42, no. 3. ed. s.l.:IBM Systems journal.

Lafontaine, C., 2007. *The Cybernetic Matrix of French Theory..* s.l.:Theory, culture & society 24(5).

Lafontaine, C., 2016. *L'empire cybernétique. Des machines à penser à la pensée machine..* s.l.:Média Diffusion..

Laloux, F., 2015. *Reinventing organizations.* s.l.:Vahlen.

Land C. and King, D., 2014. *Organizing otherwise..* 14 (4) ed. s.l.:Ephemera.

Land, C. P. M. C. G. a. F. V., 2014. *The question of organization: a manifesto for alternatives,.* 14 (4), ed. s.l.:Ephmera.

Law, J., 2010. *Making a Mess with Method, John Law.* [Online]

Available at: http://heterogeneities.net/publications/Law2006MakingaMesswithMethod.pdf [Accessed 01 06 2023].

Leach, D. K., 2016. When freedom is not an endless meeting: A new look at efficiency in consensus-based decision making.. *The Sociological Quarterly, ,* Volume 57(1).

Leonard, A., 2006. Momentum and control: a dynamic of democracy.. *Kybernetes..*

Lewin, K., 1946. Action research and minority problems,. *Journal of Social,* Volume Issues, 2,.

Lippmann, W. &. C. M., 2017. *Public opinion..* s.l.:Routledge..

Lombardi, J., 2015. *Living Cybernetics.* [Online] Available at: https://vimeo.com/134355027

[Accessed 07 10 2022].

Lombardi, J., 2018. *Youtube.* [Online] Available at:

https://www.youtube.com/watch?v=j6iTte9qngs&ab_channel=judelombardi [Accessed 07 10

2022].

Lombardo N., B. R. e. a., 2017. *The Hum.* [Online] Available at: https://www.thehum.org/ [Accessed

03 05 20].

Loock, M. &. H. G., 2015. Heuristics in organizations: A review and a research agenda.. *Journal of

Business Research,* Volume 68(9), pp. 2027-2036.

Lorey, I., 2014. The 2011 occupy movements: Rancière and the crisis of democracy.. *Theory, Culture

& Society, ,* Volume 31(7-8), , pp. 43-65..

Lübbermann, U., 2021. *Wirtschaft hacken: Von einem ganz normalen Unternehmer, der fast alles

anders macht.* s.l.:Büchner-Verlag..

Luhmann, N., 1986. The Autopoiesis of social systems, . In: *Sociocybernetic Paradoxes.* London:

Sage.

MacDonald, C., 2012. Understanding participatory action research: A qualitative research

methodology option.. *Canadian Journal of Action Research, ,* Volume 13(2), , pp. 34-50..

Malapi-Nelson, A., 2017. *The Nature of the machine and the collapse of cybernetics: a

transhumanist lesson for emerging technologies..* 1st ed. ed. s.l.:Palgrave Macmillan, .

Malik International AG, 2018. *Malik SuperSyntegrity (MSS).* [Online]

Available at: https://www.malik-management.com/malik-solutions/malik-tools-and-

methods/malik-supersyntegration-mss/ [Accessed 03 05 2020].

Malik, I., 2018. *Malik Management.* [Online] Available at: https://www.malik-

management.com/malik-approach/management-cybernetics-systemics-bionics/ [Accessed 06 10

2022].

Marsh, H., 2013. *Binding Chaos: Mass collaboration on a global scale.* s.l.:MustRead Inc...

Marsh, H., 2017. *The evolution of democracy: Explaining Trump, Brexit and the Colombia peace deal - Heather Marsh.* [Online] Available at: https://www.youtube.com/watch?v=KrD6vKymCRY&feature=emb_title [Accessed 07 10 2022].

May, T., 2010. *Contemporary Political Movements and the Thoughts of Jacques Rancière,.* Edinburgh: Edinburgh University Press, .

May, T., 2011. *Rancière and anarchic 'Government', New School and Columbia University.* [Online] Available at: https://www.youtube.com/watch?v=AsQrXmsGjcE [Accessed 09 10 22].

May, T., 2011. *The Anarchist Turn - Todd May [1].* [Online] Available at: https://www.youtube.com/watch?v=_g9ZChl4_fM [Accessed 24 10 2022].

May, T. N. B. &. N. S., 2008. Democracy, anarchism and radical politics today: An interview with Jacques Rancière.. *Anarchist Studies, ,* Volume 16(2),.

McCulloch, W. S., 1965. *Embodiments of Mind.* Cambridge: MIT Press..

McEwan, J. D., 1963. *Anarchism and the cybernetics of self-organising systems..* s.l.:Our Generation..

Mead, M. S. A. &. S. J., 1973. *Coming of age in Samoa..* London: Penguin.

Medina, E., 2006. *Designing Freedom, Regulating a Nation: Socialist Cybernetics in Allende's Chile,* s.l.: Journal of Latin American Studies, 38(3),.

Medina, E., 2011. *Cybernetic revolutionaries: technology and politics in Allende's Chile..* s.l.:Mit Press..

Miessen, M., 2010. *The nightmare of participation..* s.l.:Sternberg Press..

Mindell, D. A., 2002. *Between Human and Machine: feedback, control and computing before cybernetics,.* Maryland, : John Hopkins Universiry Press..

Mingers, J., 1992. The problem of social autopoiesis,. *International Journal of General Systems..*

mol, a., 2002. *The Body Multiple: Ontology in Medical Practice..* s.l.:Duke University Press. .

Moreira, M. E. (., 2017. *The agile enterprise: building and running agile organizations..* 1st ed. edition ed. s.l.:Apress.

Moreno, J. D., 2012. *Mind wars: brain science and the military in the 21st century..* s.l.:Bellevue Literary Press..

Mouffe, C., 2000. *The democratic paradox..* s.l.:Verso.

Nunes, R., 2014. *Organisation of the organisationless: Collective action after networks..* s.l.:Mute..

Nunes, R., 2021. *Neither vertical nor horizontal: A theory of political organization..* s.l.:Verso Books..

OccupyWallSt, 2013. *Occupy Wallstreet.* [Online] Available at: http://occupywallst.org/forum/on-consensus/ [Accessed 07 10 2022].

Oliver, D. &. R. J., 2002. Organizational Heuristics: more than simple Rules.. *5th International Conference on Organizational Discourse.,* Volume Vol. 23, No. 03.

Organise, 2018. *Amazon: What's it like where you work?.* [Online] Available at: https://static1.squarespace.com/static/5a3af3e22aeba594ad56d8cb/t/5ad098b3562fa7b8c90d5e1b/1523620020369/Amazon+Warehouse+Staff+Survey+Results.pdf [Accessed 10 10 2022].

Ortiz-Ospina, E. a. R. M., 2016. *"Trust". Published online at OurWorldInData.org..* [Online] Available at: https://ourworldindata.org/trust [Accessed 10 10 2022].

Parker, M., 2013. *Alternative business: Outlaws, crime and culture..* s.l.:Routledge..

Parker, M., 2018. *Shut down the business school: What's wrong with management education.* s.l.:Pluto Press.

Parker, M. C. G. F. V. a. L. C., 2014. *The Routledge companion to alternative organization..* London: Routledge. .

Parker, M. F. V. a. R. P., 2007. *The Dictionary of Alternatives: Utopianism and Organisation,.* s.l.:Zed Books..

Parkinson, N., 1955. *Parkinson's Law.* [Online] Available at: https://www.economist.com/news/1955/11/19/parkinsons-law [Accessed 09 10 2022].

Pask, G., 1961. *An approach to cybernetics, ,.* London.: Massachusetts institute of technology, Hutchinsons and Co.

Pellizzari, R., 2002. *The Syntegrity Group.* [Online] Available at: https://www.syntegritygroup.com/ [Accessed 10 01 2020].

Pickard, V. W., 2006. Assessing the radical democracy of Indymedia: Discursive, technical, and institutional constructions.. *Critical Studies in Media Communication.,* Volume 23(01).

Pickard, V. W., 2006. Assessing the radical democracy of Indymedia: Discursive, technical, and institutional constructions.. *Critical Studies in Media Communication, ,* Volume 23(01), , pp. 19-38..

Pickering, A., 2010. *The Cybernetic Brain..* s.l.:University of Chicago Press.

Pink, D., 2011. *Drive: The surprising truth about what motivates us.* s.l.:Penguin.

Plant, S. &. L. N., 2014. Cyberpositive. In: R. &. A. A. Mackay, ed. *#Accelerate: The Accelerationist Reader. .* s.l.:MIT Press..

Polletta, F. &. H. K., 2016. Why consensus?. *Journal of Social and Political Psychology,* Volume 4(1).

Prasad, A., 2016. *Cyborg writing as a political act: Reading Donna Haraway in organization studies..* s.l.:Gender, Work and Organization, 23(4).

Quilter-Pinner, H. S. R. J. W. &. V. V., 2021. *Trust issues: Dealing with distrust in politics.* [Online] Available at: https://www.ippr.org/research/publications/trust-issues [Accessed 10 10 2022].

Rancière, J., 1999. *Disagreement: Politics and philosophy..* s.l.:Uni of Minnesota Press..

Rancière, J., 2010. *Chronicles of consensual times..* s.l.:Bloomsbury Publishing, .

Rancière, J., 2014. *Hatred of democracy.* s.l.:Verso Books..

Rancière, J., 2019. *Staging the people: The proletarian and his double..* s.l.:Verso Books..

Rancière, J., 2021. *The emancipated spectator..* s.l.:Verso Books..

Rau, T. J. &. K.-G. J., 2018. *Many voices one song: shared power with sociocracy..* s.l.:Sociocracy for All..

Renaud, K. &. C. P., 2009. HandiVote: simple, anonymous, and auditable electronic voting.. *Journal of Information Technology & Politics, ,* Volume 6(1),.

Rid, T., 2016. *Rise of the machines: A cybernetic history..* s.l.:Random House.

Robertson, B. J., 2015. *Holacracy: the revolutionary management system that abolishes hierarchy..* s.l.:Kindle Edition..

Ryynänen, M., 2018. *LOW THEORY AND CRAZY WHITE MEN. An Interview with Jack Halberstam.* [Online] Available at: https://www.popularinquiry.com/blog/2017/12/16/low-theory-and-crazy-white-men-an-interview-with-jack-halberstam [Accessed 07 10 2022].

SCiO, 2022. *SCiO: Systems and Complexity in Organisations.* [Online] Available at: https://www.systemspractice.org/systems [Accessed 16 11 2022].

Scott, J. &. M. G., 2009. *A dictionary of sociology..* s.l.:Oxford University Press..

Semler, R., 2001. *Maverick!: the success story behind the world's most unusual workplace..* s.l.:Random House..

Snowden D. & Boisot, M., 2000. *Knowledge Management: managing a new age of uncertainty,.* s.l.:Alba executive education programs..

Soares, W. &. D. C. V., 2016. *O MESTRE IGNORANTE: TECNOLOGIAS EM REDE E INTERFACES COMUNICACIONAIS NOS CAMINHOS DA EMANCIPAÇÃO INTELECTUAL.* [Online] Available at: https://www.nucleodoconhecimento.com.br/wp-content/uploads/2016/10/mestre-ignorante.pdf [Accessed 09 10 2022].

Stacey, R., 1992. *Managing the Unknowable: The Strategic Boundaries Between Order and Chaos..* s.l.:John Wiley & Sons..

Stacey, R., 2001. *Complex Responsive processes in organizations: learning and knowledge creation..* London.: Routledge,.

Swann, T., 2018. *Towards an anarchist cybernetics: Stafford Beer, self-organisation and radical social movements..* s.l.:s.n.

Swann, T., 2020. *Anarchist Cybernetics: Control and Communication in Radical Politics..* s.l.:Policy Press..

Tanke, J. J., 2011. *Jacques Rancière: an introduction..* s.l.:A&C Black..

Telfer, E., 1970. Friendship.. In: *Proceedings of the Aristotelian Society (Vol. 71)..* s.l.:Wiley., pp. pp. 223-241.

Thomas, G., 2008. *Secrets & Lies: A History of CIA Mind Control & Germ Warfare..* s.l.:JR..

Tiqqun, 2020. *The Cybernetic Hypothesis.* s.l.:MIT Press.

Truss, J. C. C. &. L. A., 2000. The coherent architecture of team syntegrity: From small to mega forms.. *Proceedings of the World Congress of the System Sciences.*

Turner, A., 2021. Werte in Strukturen einbetten. In: *Wirtschaft hacken: Von einem ganz normalen Unternehmer, der fast alles anders macht.* s.l.:Büchner-Verlag .

Valley, C. P. E. &. A. M. M. A., 2003. *From PSYOP to MindWar: The Psychology of Victory. ,* San Francisco: Presidio, US Army Reserves 7th Psychological Operations Group..

Van Gigch, J. P., 2013. *System design modeling and metamodeling..* s.l.:Springer Science & Business Media..

Varela, F. G. M. H. R. &. U. R., 1991. *Autopoiesis: The organization of living systems, its characterization and a model..* s.l.:Springer.

Varkarolis, O., 2020. *Developing theories and tools for resisting degeneration with the Worker Cooperatives' Network of Athens..* s.l.:Nottingham Trent University.

Vollman, A. R. A. E. T. &. M. J. M., 2004. *Canadian community as partner: Theory and practice in nursing..* s.l.:Lippincott Williams & Wilkins.

Von Foerster, H., 2002. *Understanding understanding,.* s.l.:Springer-Verlag..

Walker, J., 1991. *The Viable Systems Model: A Guide For Co Operatives and Federations,* s.l.: Creative Commons non-commercial licence.

Ward, C., 1966. *Anarchism as a Theory of Organization..* [Online] Available at: https://theanarchistlibrary.org/library/colin-ward-anarchism-as-a-theory-of-organization [Accessed 09 10 2022].

Wark, M., 2013. *#Celerity: A Critique of the Manifesto for an Accelerationist Politics.* [Online] Available at: https://speculativeheresy.files.wordpress.com/2013/05/wark-mckenzie-celerity.pdf [Accessed 09 10 2022].

Wark, M., 2015. *Molecular red: Theory for the Anthropocene..* s.l.:Verso Books..

Whittaker, D., 2009. *Think before you Think: social complexity and knowledge of knowing,.* s.l.:Wavestone Press..

Whittaker, D. B. S. &. E. B., 2003. *Stafford Beer: a personal memoir..* s.l.:Wavestone Press..

Wiener, N., 1988. *The human use of human beings,.* New York: Da Capo Press..

Wiener, N., 2019. *Cybernetics or Control and Communication in the Animal and the Machine. ,* s.l.: MIT press..

Wilson, A. N., 2011. *Workers Leaving the Googleplex.* [Online] Available at: https://www.youtube.com/watch?v=w0RTgOuoi2k&ab_channel=AndrewNormanWilson [Accessed 21 11 2022].