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Is the Viable System Model of organization inimical to the concept of human freedom?

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Abstract

This paper examines the sensitivity of Stafford Beer's Viable System Model of organization to the concept of human freedom. The paper notes the many critics who have suggested that the Viable System Model is inimical to human freedom and their especial reference to its application to the social economy of Chile in the early 1970s. Drawing on the work of philosophers, a conceptual analysis of freedom is provided that suggests a complex ordinary language usage of the term. At least three determinants of freedom, that are logically independent of one another, are identified as being of relevance to its ordinary usage. The paper finds that these determinants are implicitly addressed and acknowledged within Beer's own writings, but that they are ignored by the critics of the Viable System Model and that this makes for a lack of clarity and precision in the debate. The paper also applies a further criterion, formulated in political philosophy, to judge whether the leadership of the government that applied the Viable System Model to the Chilean social economy was itself hostile to political freedom or democracy. This application of the criterion suggests that they were not.

Keywords

Management cybernetics

viable system

freedom

concept

philosophy

Institutional affiliation

Rod Thomas, Newcastle Business School, University of Northumbria at Newcastle,
Newcastle upon Tyne, NE1 8ST, UK.

Tel: 0191 227 4953; E-mail: rod.thomas@northumbria.ac.uk

Introduction

Stafford Beer's books on the managerial cybernetics of organization often carried paradoxical or oxymoronic titles. Is there any argument that is 'Beyond Dispute' (Beer 1994a)? How can 'Designing Freedom' be a sensible pursuit (Beer 1974)? What has a business manager to learn from being asked 'How Many Grapes Went into the Wine?' (Beer 1994b)? No doubt these titles were intended to challenge the would-be reader into finding out more but they also provide a subtle hint towards the dilemmas that might face management cybernetics itself: a science of communication and control must be deployed with great sensitivity if it is not to be used to deny human freedom.

In this article, I note Beer's development of a managerial cybernetics of organization and focus on its most famous component – the Viable System Model of organization. This is followed by a brief review of the many critics who have suggested that the Viable System Model of organization is inimical to human freedom. In this regard, a

special reference is made to the application of the model to the social economy of Chile in the early 1970s. I propose that ‘freedom’ is an elusive concept and seek to bring some precision and clarity to this discussion by relating it to the ideas of two philosophers: Bertrand Russell and A. J. Ayer. Three determinants of freedom are thereby identified and these are used to identify the sensitivity of Beer’s managerial cybernetics to the concept of freedom. Finally, the political philosophy of K. R. Popper is used to pass a judgement on the merits of making the Viable System Model available, as a management tool, to the Chilean government of that era.

The managerial cybernetics of organization

It is forty years since Stafford Beer wrote *Decision and Control* – a book on how science might be invoked to solve problems of decision and control in management (Beer 1966). The modelling epistemology that the book detailed was further developed in a series of subsequent books and, as a result, a new approach to the practice of management studies was established – what Beer came to call ‘the managerial cybernetics of organization’ (Beer 1979, 1981, 1985, 1994a)¹. It is beyond the scope of this article to detail in full the content of these writings and I intend to assume, for the most part, that the reader is reasonably familiar with this corpus. As such, they will know that an important aspect of Beer’s life project was an investigation into ‘how systems are viable – that is capable of independent existence’ (Beer 1989: 11).

Decision and Control briefly presented a model that sought to account for the nature of neuro-physiological control in the human body (Beer 1966). The structural principles and relationships thereby discovered were briefly mapped onto the structure

¹Beer used the generic sub-heading ‘The managerial cybernetics of organization’ in the title of many of his books. For an overview see Beer (2000).

of a firm. The model, which came to be called the ‘Viable System Model’ or ‘VSM’, was further developed in a subsequent book – *Brain of the Firm* (Beer 1972). In 1979, Beer authored a companion volume to ‘Brain of the Firm’. This work, *The Heart of Enterprise*, was a lengthy treatise that attempted to deduce, by other means, the same principles and relationships of management and organization that were presented in the earlier neuro-physiological model (Beer 1979). The book deploys aprioristic reasoning and logical argument and illustrates its propositions with Platonic style dialogues between imaginary managers. In 1985, a third volume, *Diagnosing the System for Organizations*, completed Beer’s explanation of the VSM (Beer 1985). This book, written in the format of a workbook, was designed to assist in the diagnostic application of the model to an organization selected by the reader. However, unlike the previous works, it presented the VSM by using iconographic models to precisely represent the structural relationships and communication channels identified in the earlier work.

In 1971, Beer was invited to apply the VSM to the organization and regulation of the Chilean economy – project ‘Cybersyn’ as it was called by the then Chilean government. A second edition of ‘Brain of the Firm’ includes an account of this project, its mixed success, and the lead up to the military coup that deposed the project’s sponsor – the *Unidad Popular* coalition government led by President Salvador Allende (Beer 1981).

The Viable System Model of organization

Holism is a defining mark of Beer’s managerial cybernetics (Beer 1966).

Management cybernetics always stresses the special properties or aspects of phenomena that make such phenomena appear as an organized structure, rather than a mere heap. The word ‘viable’ is a technical term in embryology: it means ‘capable of

independent existence' (Beer 1989: 11). For Beer, the VSM represented the invariant characteristics of a particular class of holistic systems:

...all the systems that interested me, whether in industry or computing or biology, had in common the difficulty of understanding the role of autonomy. This was the notion that I set out to investigate at the beginning of the 1950s. (Beer 2001: 2)

Beer's model of how systems are viable, that is how they are capable of independent existence, defies compression because of its complexity, but it represents the class as exhibiting a particular pattern of organization. This pattern is self-sustained because it involves five subsystems of interactive loops operating within a changing, but potentially supportive environment. The five subsystems of any viable system interact in a way that regulates the 'variety' of that defined system; variety being the states of the system relevant to the conventional criteria that are used to identify the system under investigation. Only an observer can define such criteria.

One subsystem consists of the set of activities that implement the identity of the viable system. But by definition, such activities need to be constrained if they are not to destabilize the identity of the system in focus. Similarly, such activities may need to be adapted if the system is to evolve in a way that is compatible with continuous survival. In the model, this means, amongst many other things, that the other four subsystems must embody a higher order logic that acts to constrain the implementation subsystem, whenever its unhindered component actions would undermine the coherence of the whole system. In the terminology of the model, they act as a 'meta-system':

The meta system must make some intervention, and should make only that degree of intervention that is required to maintain cohesiveness in a viable system. (Beer 1979: 158)

Moreover, the model proposes that viable systems are recursively organized – they are contained within themselves much like a set of Russian dolls. One of the five subsystems – the implementation system – is necessarily a set of viable systems itself. Hence, what would be perceived to constitute a meta-system at one recursive level of interest is perceived to constitute a part of an implementation system at another recursive level of interest.

This rudimentary account of the model indicates that, given an interest in the viability of a specified system, questions of freedom and constraint may be conceptualized as questions of logic:

As long as oppression and freedom are seen solely as normative values, the outcome is determined by self-interest. Then we get polarization, and people will fight to the death for a prospect which is in either case not viable. But if we raise our eyes to the higher level of the total system in designing ... controls, and use the viability criterion as the balance point, liberty must be a computable function of effectiveness for any total system whose objectives are known. (Beer 1975*b*: 428)

For Beer, this means that from a modelling perspective:

Freedom is in principle a computable function of systemic purpose as perceived. That is the explosive conclusion. It is explosive precisely because it sounds heartless, whereas the dear question of freedom is full of heart. The trouble seems to be that people do not like to believe that any matter of passion for them could

possibly be bound by scientific rules, forgetting that the passion itself is limited by the rules of their own physiological capability to endure it. (Beer 1979: 158)

Some critical commentaries on managerial cybernetics

The first chapter of 'Decision and Control' opened with a section that was entitled 'How to Neutralize a Revolution'. It invoked Machiavelli's advice on how to condemn those who question an existing order: 'the basic technique is to pretend that they do not exist' (Beer 1966: 3–4). These words seem rather prophetic some forty years later, for it would appear that very few management scholars have seriously grappled with Beer's writings and his approach to organizational studies rarely features in books on that subject.

One reason for this may reside in the fact that the VSM and its application in Chile attracted a not inconsiderable number of critical, and sometimes polemical, commentaries (Adams 1973; Rivett 1977; Brissy 1989; Checkland 1980; Ulrich 1981).

Whilst these critics develop their arguments to a greater or lesser degree, and whilst they take their arguments in different directions, a central thrust to their criticisms is that the VSM, as a putative model of social organization, is inimical to human freedom. I will offer only a brief outline of each critic's perspective for present purposes.

John Adams (1973) offered his trenchant criticisms by reviewing a public lecture, entitled 'Fanfare for Effective Freedom', that was delivered by Stafford Beer in 1973 (Beer 1975*b*). In the lecture, Beer described his application of the VSM to the entire social economy of Chile. Adams observed that:

His cybernetic model of any viable system, currently being put into working order for President Allende of Chile, is a fully elaborated and computerized model of a tyranny.... It works for the worker and the minister in the same way that it works for a dog and his trainer, a private and his general, a slave and his master. Its function is control. (Adams 1973: 4)

In the lecture Beer offered a cybernetic analysis of the:

... possibility that it is open to mankind at least to compute a set or organizational structures that would suit the needs of actual men – as being at once themselves independent viable systems with a right of individual choice, and also members of a coherent society which in turn has a right of collective choice. (Beer 1975*b*: 428)

Beer's analysis led him to conclude that: '... liberty must be computable function of effectiveness for any system whose objectives are known' (Beer 1975*b*: 428).

In response, Adams observed that:

For purposes of explaining this to the workers we can reduce the relationship to the slogan *Liberty is Control* [original emphasis]. It has a rhythm that lends itself readily to chanting along with other Newspeak slogans such as War is Peace, Might is Right, Square is Round, etc. (Adams 1973: 4–5)

In his review, Adams proceeded to summarize the neuro-physiological basis of the model that Beer had detailed in his book 'Brain of the Firm' (Beer 1981). Adams allied the model to the behavioural technologies championed by the psychologist B. F. Skinner:

Those who have been induced by their culture to act to further its survival through design must accept the fact that they are altering the conditions under which men live and hence, engaging in the control of human behaviour. Good government is as much a matter of the control of human behaviour as bad... (Skinner cited in Adams 1973: 6)

Adams concluded that:

... the present crisis in Chile is precisely about who has been induced, to use Skinner's euphemism, to control Chile. Professor Beer is offering one of the contenders for the honour of controller a tool for greatly strengthening its control.... But this is a problem only if there is a dispute about objectives and this seems to strike Professor Beer and President Allende as a remote possibility.... the sort of confusion to which those in power seem to be prone. It is Louis XIV who is generally credited with having transformed the confusion into a political principle. This principle is enunciated succinctly as *l'etat c'est moi* [original emphasis].²
(Adams 1973: 5)

The thrust of Adams critique has been repeated by others. Jacques Brissy represents Beer as a writer who moves 'from analogy to model to utopia' (Brissy 1989: 228). Patrick Rivett, in a critique of Beer's approach, asks 'Who controls the controller?' (Rivett 1977: 36).

Similarly, a book reviewer of Beer's axiomatic exposition of the VSM in 'The Heart of Enterprise', found it to be:

² 'L'etat c'est moi' translates to "The state – it is me".

Inadequately referenced and uncritical throughout of its own assumptions, the book assumes rather than argues its position. And the book's position needs to be argued very carefully because it offers us the prospect, if the model were taken too seriously, of a negative utopia in which operational units, which the author would dearly like to call autonomous, are in fact allowed only that degree of freedom which is 'compatible with systemic cohesion'. Since the system is monolithically defined, that is a prospect which ought to scare us. (Checkland 1980: 423)

A philosophical spin to the charge that the VSM is inimical to human freedom was provided by Werner Ulrich's critique (1981) of the application of the VSM in Chile – project 'Cybersyn'. Ulrich argued that the VSM represented an exercise of theoretical reason in the Kantian sense: 'it produces explanation of what is' (Ulrich 1981: 33). Ulrich contrasted this with Kant's notion of practical reason: 'Reason is practical in the Kantian sense if it gives us cognitive guidance in practical action and design of what ought to be' (Ulrich 1981: 33). Ulrich found the VSM to be lacking in a number of key criteria that were, for him, required of any 'systems paradigm' that supported the exercise of practical reason. Chief amongst these was the criteria of 'intrinsic control versus intrinsic motivation' (Ulrich 1981: 34).

In relation to this, Ulrich defined intrinsic control as 'the capability of a system, independently of an external controller ... to maintain its stability ... across a range of environmental or internal variations' (Ulrich 1981: 34). In contrast, intrinsic motivation was defined as 'internal autonomy and responsibility for choice' (Ulrich 1981: 34).

In applying these criteria to the VSM, as a model of a social organization, Ulrich contended that the ideal of viability is 'one of intrinsic control, but extrinsic

motivation' (Ulrich 1981: 43). In short, Ulrich argued that the 'source of purposefulness' is unconsidered by the VSM representation of social organization. Consequently, the VSM offered nothing to assist self-reflective humans choose their goals.

These findings led Ulrich to classify the VSM as an example of 'Scientific thinking... characterized by its preoccupation with theoretical reason and its disavowal of the very possibility of practical reason' (Ulrich 1981: 33). The charge that the Chilean application of the VSM had the potential to suppress human freedom was once more levelled:

Cybersyn's built in purpose thus appears to be a one-sided efficiency of production. With respect to this purpose, it may indeed help the workers maximize their effectiveness.... But this reflects mere tool design that does not consider its own normative content, the missed opportunity for true democratisation of the workplace ... the workers are 'helped' to be better tools of industrial production; that is all. True, the overall political purpose of improved productivity was democratic socialism. The tool, unfortunately, is closer to... managerial fascism. (Ulrich 1981: 54–55)

The concept of freedom

Freedom is an elusive concept. One problem is that whenever people talk of something as 'free' there is no clarity to their expression unless they also say what it is free from. Consider: 'I am free'. But am I free from the necessity to eat? Am I free to do whatever takes my fancy – no matter what the effect that my action has upon others? It is only in a most abstract sense that freedom means the complete absence of external obstacles to the realization of the will and its desires.

What tends to follow from this is that those who seek to chase down the meaning of freedom tend to run past one another. In 1979, Stafford Beer thought that ‘freedom’ was perhaps ‘...the most emotive word that could be written at the head of any page’ (Beer 1979: 145). Such emotion makes people run all the harder. It follows that freedom can only be rationally discussed if discussants surrender some of theirs: they must adopt some standards of precision and clarity in the way that relevant concepts are to be used. The precision and clarity that is perhaps required can be found in the writings of philosophers.

The classical liberal conception of freedom is that it represents liberty *from*; the absence of interference and obstruction (Berlin 1969). This was the stance of the utilitarian philosophers who believed that human happiness is best promoted by freedom to do as one pleases. Yet they also realized that such freedom could not be unlimited, because if it was, then the freedom of one might be exercised at the expense of another:

... men should be free to act upon their opinions – to carry these out in their lives, without hindrance, either physical or moral from their fellow-men, so long as it is at their own risk or peril. This last proviso is of course indispensable. (Mill 1962: 184)

Where does the authority of society begin and the authority of the individual end? For J. S. Mill:

Each will receive its proper share, if each has that which more particularly concerns it.... As soon as any part of a person’s conduct affects prejudicially the interests of others, society has jurisdiction over it, and the question whether the

general welfare will or will not be promoted by interfering with it becomes open to discussion. (Mill 1962: 205)

The liberal notion of freedom is concerned with the ability to control – the origin of will and desire is of no concern. This contrasts with more authoritarian views of freedom. For other philosophers have asked whether freedom is ‘true’ freedom if it is exercised as a mere slave to passions (Plato), or as a product of a false consciousness of real interests (Marx), or if it selfishly ignores the interests of the tribe or state (Plato and Hegel). But such theorizing results in a gross departure from the ordinary usage of the concept of freedom and it has been widely criticized for the horrors in which it results (Russell 1928; Koestler 1955; Popper 1957, 1966; Ayer 1990). For as Bertrand Russell remarked: ‘Hegel and his followers think that “true” freedom consists in the right to obey the police’ (Russell 1928: 169).

Yet there remains something deeply unsatisfactory about the liberal conception of freedom, even when its provisos and qualifications are emphasized. The reasons for this are neatly summarized by Ayer:

... it takes no account of the factors that govern a man’s choice. It is of course, open to anyone to decide to use the word freedom so that its application depends only upon the occurrence of a process of choice, irrespective of the way that the choice is determined. But in the first place, this would not be in accordance with customary usage, which requires that, at least in some cases, a restriction of the field of choice should be regarded as a limitation of freedom. And secondly, it would fail to bring out the actual complexity of the political problem. For the practical aim of those who represent themselves as advocates of political freedom is not merely to remove the hindrances which prevent men from doing what they

choose, but also to transform the factors which limit and pervert the nature of their choice. (Ayer 1990: 136)

One concept that can bring the complexity of the discussion to the fore is the mathematical idea of a 'spielraum'. In his essay on *The Concept of Freedom*, Ayer offered this metaphor of a 'playing-space' as a means for assessing a man's freedom:

In connection with the judgements which we make about freedom, this metaphor of a playing-space can be applied in three ways. For our assessment of a man's freedom may be held to depend first upon the degree to which his *spielraum* [original emphasis] is encumbered, secondly upon its extent and thirdly upon the manner in which its boundaries are fixed. These three criteria are logically independent of one another, and do not always reveal a similar result when they are severally applied to a given case. There appears, however, to be no established rule for giving any one of them the preference over the others in the case where they conflict. (Ayer 1990: 139)

In 'Decision and Control', Beer referred to how the solution to a mathematical problem may be contained by a particular phase space. Consider Beer's example of a friend who lives in a Southerly direction from his own house in England. The friend lives not further West than South West and not further East than South East. These conditions have set a phase space for the solution to the problem; they have limited the problem of finding the house to that of taking only 90 of the 360 possible search bearings. Similarly, applying Ayer's metaphor to this description, offers an almost unlimited, unencumbered *spielraum* in which the friend can choose to live. As of yet, there is no reason to discount any location within the *spielraum*. For instance, there is no reason to discount rivers or lakes. But if we are told that the friend's house cannot

be a houseboat then some such locations can be discounted – his spielraum is encumbered. Similarly, there are, as of yet, no limits as to how far Southward the friend is free to live. But, if we are told that the friend also lives in England then such a limit to the spielraum will apply.

Hence, if we take freedom to mean not only the absence of external obstacles to the realization of the will and its desires, but also the ability to govern the range over which the will and its desires may be exercised, then using the notion of spielraum we might focus attention on what might be called the three ‘determinants of freedom’:

1. The first determinant is the power to overcome environmental obstacles to self-determination within the given spielraum.
2. The second relates to the extent of the spielraum in which such self-determination may be exercised.
3. The third relates to whomever or whatever determines the limits of the spielraum.

Is it possible to use the concept of a ‘spielraum’ and the three determinants of freedom to illuminate the sensitivity of Stafford Beer’s managerial cybernetics to the concept of freedom? The remainder of this paper is an attempt to do just this.

Managerial cybernetics as designing freedom

The first of our determinants of freedom is:

... the one that is employed when we test a person’s freedom by his ability to satisfy his desires. So long as we confine ourselves to this criterion, it does not

matter what these desires are, or how they came to be acquired. All that is relevant is the degree to which they succeed in being satisfied. (Ayer 1990: 139)

In the terms of the *spielraum* metaphor, this determinant ignores the influence of the other two determinants. The extent of the *spielraum* and how this was itself determined, has no influence on the ability to satisfy desires within the given *spielraum*. Hence this determinant fails to consider the factors that might be limiting the range of choice itself – it does not matter if these are self-selected or imposed from elsewhere. It is only the freedom to realize a particular choice that is considered.

In Beer's managerial cybernetics, the counterpart to this first determinant of freedom is Ross Ashby's 'Law of Requisite Variety' (1964) and the various principles of management that Beer deduced from it (Beer 1979). The law is usually summarized in a simple statement: 'only variety can destroy variety' (Ashby 1964: 207). This simple statement summarizes the logical possibilities inherent in one defined system being able to counter the effects of another defined system. However, when looked at from another perspective, the law also summarizes the logical possibilities inherent in one defined system being able to freely achieve its desired outcomes within a defined set of possibilities.

For instance, consider a conference delegate, D, who, at the mid-morning refreshment break, so to speak, desires a cup of tea. Similarly, at the conference lunch break, D desires a cup of coffee. Then the state of D, at the end of the conference, if these were her only desires, would be either satisfied or dissatisfied – depending on whether she was able to obtain a cup of tea and coffee according to her preferences. Which of these two states will prevail? This will depend upon the elements that constitute the supply of drinks R to the conference meeting and the ability of the delegate to

communicate her preferences to those elements. In particular, if R has a variety that is comprised of both tea and coffee and D has a communication channel capable of carrying the respective requests for tea and coffee to R, then the potential state within D called 'dissatisfaction' is destroyed; she obtains drinks according to her desires. She is free to choose.

One of the principal concerns of Beer's managerial cybernetics is the diagnosis of managed systems using the yardstick of requisite variety. Beer's whole approach is acutely aware of this determinant of freedom. This provides an insight into why freedom is paradoxically in need of design. It also dissolves the paradox that 'liberty is control' (Adams 1971).

Design is the clue. Humankind soon saw that it could not hope for the best in acquiring shelter, clothing, and food. It had to design tools and weapons. From that stage human kind was led by its technological nose to the moon.... En route we gave up designing for humankind, and designed for aggrandisement instead. (Beer 1979: 92-93)³

The cybersyn project, freedom and equality

As noted above, this first determinant of freedom exhibits no interest, as such, in the possibility that desires may vary between individuals or in the extent of the desires themselves. This is reflected in the implication of Ashby's law that 'it is not a matter of counting possible states, but of matching them' (Beer 1979: 89). But there are certain fundamental needs that it is difficult not to recognize as nearly universal: food, drink, housing, sex. As Bertrand Russell argued:

³Similar conclusions have been independently reached by others using very different arguments. For example, Fuller (1969).

Whatever else is involved in freedom, certainly no person is free who is deprived of anything in the above list, which constitutes the bare minimum of freedom.

(Russell 1928: 171)

Furthermore:

... it is obvious that the minimum of freedom can be better secured in a society than by Robinson Crusoe; indeed sex and parenthood are essentially social...

Society diminishes the physical obstacles to freedom. (Russell 1928: 171–172)

The fact that the first determinant of freedom fails to consider the extent of the desires that are being pursued brings it into conflict with the second determinant of freedom.

As Ayer observes:

... the effect of using the second criterion is to establish a positive correlation between the extent of the *spielraum* and the freedom its owner enjoys. (Ayer 1990: 139–40)

Given this second determinant of freedom, Werner Ulrich's criticism of project *Cybersyn* seems much less sensible, for it is now no longer difficult to appreciate the emphasis that a political programme of democratic socialism places on industrial productivity. The political programme of the 'Unidad Popular' coalition was formulated to address the needs of a country in which they estimated a half a million families to be homeless, with as many again living in conditions without adequate sewage disposal, drinking water or light. A half of all children under fifteen were

estimated to be malnourished. In conjunction with this, 10 per cent of the population, together with foreign owned business concerns, consumed half the national income.⁴

Ulrich's criticism was that the 'Cybersyn' project 'reflects mere tool design', fails to consider 'its own normative content', and was a 'missed opportunity for true democratisation of the workplace' because 'the workers are "helped" to be better tools of industrial production; *that is all* [emphasis added]' (Ulrich 1981: 54–55). This criticism is based on a failure to acknowledge any potential relevance of the second determinant of freedom: the extent of the *spielraum* in which self-determination may be exercised. It is this dimension that most social and economic, as opposed to penal legislation, is designed to address (Ayer 1990).

For instance, what weighting does Ulrich's ethical qualms place upon the question of whether food ought to be available to the mass of a country's population? What limits ought to be placed on a political system in which small minorities exercise their freedom at the expense of others? Is it illegitimate for a democratically elected government to attempt to address these issues using the tools of management cybernetics? As Bertrand Russell sarcastically put it:

Advocates of capitalism are very apt to appeal to the sacred principles of liberty, which are all embodied in one maxim: *the fortunate must not be restrained in the exercise of tyranny over the unfortunate* [original emphasis]. (Russell 1928: 174)

In Beer's VSM, the counterpart to these considerations is that:

⁴The Unidad Popular coalition consisted of several political parties that approved a programme of action in 1969. These estimates are presented in its published political programme (Allende 1973).

... liberty must be a computable function of effectiveness for any system whose objectives are known. (Beer 1979: 428)

Managerial cybernetics and value freedom

The second determinant of freedom leads to a consideration of the third determinant of freedom – the provenance of the spielraum. It is this consideration that underpins Werner Ulrich's criticism (1981) of the VSM as a tool of 'managerial fascism', Adams' summation (1973) of it with the slogan 'l'etat c'est moi', and Rivett's question (1977) as to 'who controls the controller', etc.

As Ayer observes:

It ... seems paradoxical to say that a man is free if his course of action clearly depends upon decisions that he did not take or material factors over which he has no control. To return to the example of the scientifically planned society, the reason for judging as, surely, nearly everyone would, that its members would not be free, is that ... the pattern of their lives would have been antecedently determined, even though they might not be aware of it themselves. If we considered the first two criteria, we should allow that members of such a society enjoyed a high degree of freedom; for, if the planning was successful, their spielraum might be both extensive and unencumbered. It is the influence of this third criterion that turns the scale. (Ayer 1990: 141)

In Beer's managerial cybernetics, the counterpart to these considerations is that:

When we speak of management and its decisions we are really speaking of the settling of belief.... To study what really happens we need to consider the account

given of this process by men who have made a special study of how it works – the philosophers and psychologists. (Beer 1966: 16)

In ‘Decision and Control’, Beer assembled an analysis of the ‘fixing of belief’ and acknowledges it to be inspired by the pragmatic philosopher, C. S. Pierce (2000). In a thumbnail sketch, Pierce proposed that belief is fixed by four methods and Beer uses them to discuss how management may be conducted. The method of tenacity uses the process of conditioning. The method of authority hinges on an individual’s subservience to a system of which (s)he forms a mere part. The method of apriority is one in which beliefs are fixed by the axioms of the language through which they are discussed. Finally, there is the method of science that Beer championed.

Beer always regarded the VSM as a scientific model: a rigorous description of what makes any system viable. In his modelling epistemology, viable systems, when represented by the VSM, share structural relationships that are invariant with that present in the neuro-physiology of the human body – there is an isomorphism. For Beer, these represented the ‘Laws of Viability’. Now whether one accepts Beer’s position is determined by the philosophy of science that one adopts. For instance, it is hard to imagine how a viable system model of a social organization (as opposed to a human body) might be refuted by empirical observation because any putative viable social system will have so many conditions of existence attached to it. It follows that the required isomorphism – from the model to the relevant empirical theorems of regulation in the human body – may be left undemonstrated (Rudner 1966).

Be that as it may, science has an interest in natural laws – regularities in nature. This is quite distinct from normative laws – legal enactments or normative commandments that are enforced by men. It follows that if there is a class of viable systems that is

capable of being understood by science, they are not constructed in terms of man-made normative laws. In other words, the VSM is value-free; the model itself can't be held to account for the regulatory uses to which it might be put.

Given this division, the role of managerial cybernetics in governance might be summarized, in the most unscientific of English, as follows:

All I can do is share an experience. All I can say is that is how it was. Here are various approaches to various issues.... Somewhere in all of this is the metamessage to do with *insight* and to do with *hope* [emphasis added]. Naturally I hope you got the message and maybe learned a new skill but a not a new *creed* [emphasis added]. (Beer 1975a: 456)

Where does this leave Werner Ulrich's charge that knowledge and will are inseparably intertwined, that this fact cannot be ignored, and a new critically normative 'systems paradigm' is thereby required? One response is that:

... the sociology of knowledge hopes to reform the social sciences by making the social sciences aware of the social forces and ideologies which unconsciously beset them. But the main trouble about prejudices is that there is no such direct way of getting rid of them. For how shall we ever know that we have made any progress in our attempt to rid ourselves from prejudice?... Self analysis is no substitute for those practical actions which are necessary for establishing the democratic institutions which alone can guarantee the freedom of critical thought and the progress of science. (Popper 1957: 222–23)

Our analysis suggests that in order to decide whether the particular use of the VSM in Salvador Allende's Chile was inimical to human freedom, one must conduct an

analysis across all three of the criteria relevant to the concept of freedom and somehow pass a personal judgement. Nevertheless, whilst Beer's discussions of managerial cybernetics have been shown to be sensitive to the three criteria – this does not appear to be the case for his critics.

Can any judgment be passed on whether the leadership of the Chilean government that applied the Viable System Model to the social economy was itself hostile to political freedom or democracy? Our analysis suggests that one must step outside of Beer's writings on management cybernetics to pass a normative judgement. One might base one's judgement on criteria advanced in the political philosophy of Karl Popper. Popper held the view that by expressing the central problem of politics in the form 'Who should rule?' – a formulation that Popper traced to Plato's *Republic* – a lasting confusion was created in political philosophy (Popper 1966). Popper argued that any possible answer to this is quite useless because of the 'paradox of freedom': 'what if it is the will of the people that they should not rule, but a tyrant instead?' (Popper 1966: 123)

Popper argued that what political thought should face from the onset is the prospect of bad governance. Hence:

... This leads to a new approach to the problem of politics, for it forces us to replace the question 'who should rule?' by the new question: how can we so organize political institutions that bad or incompetent rulers can be prevented from doing too much damage? (Popper 1966: 121)

The result of this re-formulation is that:

A state is politically free if its institutions enable its citizens in practice to change a government without bloodshed when a majority wishes such a change. (Popper 1999: 89)

It follows that by this criterion a man who believes in freedom is not bound by the decisions of either the minority or the majority – if those decisions intend to dismantle the institutions of democracy. He is free to fight tyranny and the paradox of freedom is avoided. In this sense it is no longer paradoxical to say of a democracy: ‘l’etat c’est moi’.

The history books suggest that Salvador Allende believed in the institutions of Chilean democracy and in the criterion of freedom as defined above. He sat in the Chilean senate from 1945 to 1970 and stood unsuccessfully for the Chilean Presidency in 1952, 1958 and 1964. In 1970, he was elected President at the head of a broadly based Popular Front Coalition. He died, reportedly in hand-to-hand fighting in the Presidential Palace, refusing to surrender his office, when elements of the Chilean armed forces overthrew his government and the Chilean constitution on 11 September 1973 (MacEoin 1975).

Conclusion

This paper has examined the sensitivity of Stafford Beer’s Viable System Model of organization to the concept of human freedom. It has found that the criticism made of the model, and managerial cybernetics more generally, fails to consider the complex ordinary language usage of the concept of ‘freedom’. Such usage suggests that there are at least three dimensions to human freedom that are of interest. These are logically independent of one another and, as such, severally applying them as criteria to assess a given case can give rise to puzzles and paradoxes. All three are found to have been

addressed and acknowledged within Beer's writings but this is not so for his critics. Finally, a further criterion, formulated in political philosophy, has been used to judge whether the leadership of the Chilean government that applied the Viable System Model to the social economy was itself inclined to either promote a tyranny, or otherwise be hostile to political freedom or democracy. The application of the criterion suggests that they were not.

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