# 8. A Systemic Blueprint for Governing

> "Our social systems are far more complex and harder to understand than our technological systems. Why, then, do we not use the same approach of making models of social systems and conducting laboratory experiments on these models before we try new laws and government programmes in real life? The answer is often stated that our knowledge of social systems is insufficient for constructing useful models. But what justification can there be for the apparent assumption that we do not know enough to construct models but believe we do know enough to directly design new systems by passing laws and starting new social programmes? I am suggesting that now we do know enough to make useful models of social systems. Conversely, we do not know enough to design the most effective social systems directly without first going through a model building experimental phase. But I am confident, and substantial supporting evidence is beginning to accumulate, that the proper use of models of social systems can lead us to far better systems, laws, and programmes."
>
> Jay W. Forrester 1970

> The key issue here is how to reorganise the global economy along social federalist lines so as to allow the emergence of new forms of fiscal, social, and environmental solidarity, with the ultimate goal of substituting true global governance for the treaties that today mandate free movement of goods and capital.
>
> (Piketty 2020)

## 8.1 Introduction

My interest in government was sparked by the head teacher at the last secondary school I attended, but at that time that interest was overshadowed by my enthusiasm for mathematics and science. However, the experience of living and working in the United States for two years 1968 to 1970 reignited that interest, so that on my return to the UK I began a programme of reading to better understand government and its functioning. Apart from the work of Jay Forrester (1971) and the MIT group that was discussed in the last chapter, it became clear from my research that science had had little impact on models of governing and global evolution. This remains true to this day but there is now increasing interest in applying system thinking to the endeavour of modelling government (e.g. Ison and Straw 2020).

As a result of my experience of the United States I joined the UK Labour Party in 1970 and in 1974 I became a party activist, and so began my initiation and apprenticeship into the complex world of management, government, and democracy. In the first instance those experiences raised many questions for me, but as a result of an article in a computing magazine describing project Cybersyn, undertaken by Stafford Beer in Chile 1970-1972, I read my way through his writing. The Cybersyn project was

described by Beer in his book *Brain of the Firm* (1981 2nd Ed) and has been subsequently described in '*Cybernetic Revolutionaries'* (Medina 2012). In 1983 I sought to meet Stafford Beer because, in his writings, I believed that he had created a scientific path to understanding the questions that my previous reading and practical experience had raised. That initial meeting with Beer and the many subsequent others until his death in 2002 resulted in the change of direction to my life from exploring the ideas of mathematics and physics to exploring systems thinking and its applications.

A society is a dynamic entity that exists in a dynamic world and should be conceptualized as a dynamic system, that is it should be thought of as a purposeful input-process-output structure consisting of subsystems defined as I have discussed in previous chapters. Secondly modelling governing, is exactly to model a control system with the purpose of holding aspects of the dynamic society steady, as also discussed in the previous chapters. Governing, therefore, is an application of the science of cybernetics, just as Plato (2006) more than 2,300 years ago and Ampere (1834) nearly 300 years ago both understood. Any governing system must be structured in accordance with the laws of cybernetics; in particular that is Ashby's Law of requisite Variety, the Conant-Ashby theorem, and the sub-optimisation theorem all discussed in Chapter 4. We would not now neglect the laws of gravity, and aerodynamics in designing an airliner, but we do the equivalent, forget the contributions of Plato and Ampere, and neglect the laws of cybernetics, when thinking about the design of a governing system. Not surprisingly our governing systems don't get off the ground!

As with all WEIRD thinking, traditionally the starting point when thinking of government, is to think in terms of objects, hence *nation*, *country*, *government, parliament,* etc. words all describing objects not processes and omitting the fact that all exist within the dynamic ecosystem of planet earth.. But government is about leading and managing a society, it is a regulatory system which must sustain a people and their environment. The world is a dynamic place, the environment is an evolving dynamic system; the collection of people that are present in the geographic area that is a nation are an evolving dynamic system. The culture, attitudes and values of these people are emergent properties of that system and change over time. The actions of the people can change the ecosystem for the better and for the worse. A society must maintain a productive relationship with its environment if it is to survive. The government is also an evolving dynamic system of itself, and the culture, attitudes and values of those people who form the government are emergent properties of that system and change over time. One of the purposes of democracy is to keep the evolution of the governmental system in step with the evolution of the system that is the nation as a whole. A government must maintain a productive relationship with its people if it is to keep its trust. If it parts company with its people the historical evidence is that even the harshest and most violent methods cannot maintain a government in power for very long. Governments of this nature inevitably fail but usually not before many people have perished. A representative parliament therefore should be an evolving system that is capable of reflecting the evolution of its people. To that end we could ask such questions as 'why have all elections on the same date?', 'Why have fixed term parliaments with all members potentially changing at the same time/'. There are many other possibilities; that would provide steady evolutionary change. Are elections the best method of choosing a representative? The ancient Athenians used sortition, a lottery system, to choose their government. A lottery system takes away one of the least desirable aspects of our present system that representatives are chosen on many

occasions from those that seek power for personal reasons, and once they are elected seek change in order to preserve their own continuing position holding on to the power they have achieved.

Societies are of course extremely complex in their functioning, much more than any airliner, my aim for this chapter, therefore, is just to outline an approach to modelling governing from a systemic process perspective that is rooted in the science of cybernetics. I begin by setting out how a collection of people may be defined as a system in the same way that any living entity may be considered in an ecological system. From there I then consider firstly the implications for the way in which the environment might be managed, following the considerations in chapters 5 and 6. Then secondly I explore the guiding implications arising from the Law of Requisite Variety for a constitution. Further, the Conant-Ashby Theorem tells us that to be effective a control system must contain the best possible model of the system under control. Because of the complexity, only by engaging all minds in a society can an effective model be brought to bear on the problem of controlling the society. This I take to be the primary purpose of '*democracy'* and why democracy is thought to be the best possible form of government. But of course it is *through* the governing system that all minds are brought to bear, and there are a multiplicity of ways in which the governing system can be structured to achieve this aim, the Conant-Ashby Theorem and Beer's VSM suggests the guidelines. From my studies and engagement it seems to me that the evidence is that in the great majority of cases the systems of national government currently operating are failing. I therefore explore the consequences of using the principles developed in the previous chapters to design guidelines for a *process systemic democracy*. Lastly I explore the implications of the sub-optimisation theorem, how can we avoid sub-systems seeking to optimise their wellbeing, wealth, or any other variable at the expense of other sub-systems.

## 8.2 Defining the system in focus

Nations are a relatively modern idea (Hobsbawm 1990) and assumed to be if not the sole focus when considering government at least the principle focus. In chapter 4 section 4 I explored the question of the understanding of the systemic individual and concluded that an individual system is the system in focus at any one time. I therefore propose to consider government in terms of *community*. A community can be a band, a tribe, a chiefdom, a state (Diamond 2012), but further than that also a hamlet, a village, a town, and many other types of group. I begin with communities that live together in a geographic area, later I will consider the role of communities brought together by their common skills, and other organisations operating within a geographic communities or across many geographic communities.

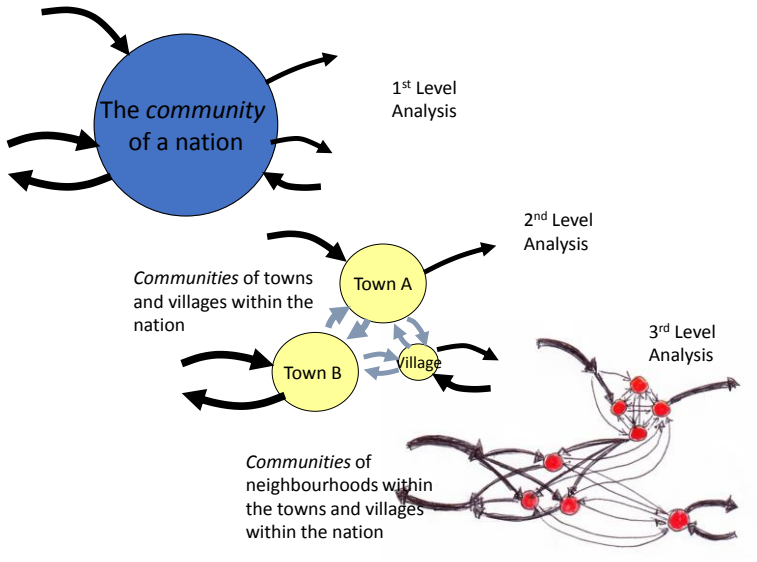


*Figure 8.1: Illustrating the recursive nature of the word 'community'.*

Communities have a very much longer history than states, or countries and certainly predate agriculture and the idea of fixed settlements. Early communities were small groups of people but in the modern world communities can be of any size, even, a country, a region, or the whole community of homo sapiens. Further, in our modern world communities come together not only in terms of communal living, i.e living together in a geographical area, but also coming together through common interests and common expertise. The problems to consider in governing a community, include what is the purpose of the community, how must communities come together to build larger structures, and how might the various communities work together?

Just as animals and ecological systems sometimes fail to adapt, communities do too, and sometimes collapse. Malcolm Levitt (2019) concludes from the historical evidence that -

> Explanations of collapse in terms of competing mono causal factors are found inferior to those incorporating dynamic interactive systems.

This brief extract supports the path I am taking, that a systemic approach to understanding how a community might maintain viability is the one most likely to provide explanation. Levitt also writes that -

> …..collapse should be explained as failure to fulfil the ancient state's core functions, assurance of food supplies, defence against external attack,

> maintenance of internal peace, imposition of its will throughout its territory, enforcement of state wide laws, and promotion of an ideology to legitimise the political and social status quo.

Here Levitt sets out the purposes that the government of a community must address. In summary this is exactly the maintenance of the relationship with the external world and the maintenance of the internal relationships as would be expected from the preceding chapters. But he does not mention here the role of the natural environment which has played a role in societal collapse (Diamond 2005)

The problem for management of a human organisation is to constrain the variety of actions in the behaviour of those people involved within the organisation to those actions which fulfil the purpose of the organisation. But if we now focus on a community and its government, for a community of people co-living there is no immediately obvious overall purpose to constrain actions to in quite the same way as for example the restaurant considered in Chapter 4. From the preceding chapters I conclude that any human organization has the same necessities as an animal in its need to survive and adapt to a changing environment. But any human organisation has the added problem of maintaining its internal structure and the necessary relations between all the people (and organisations including sub-communities) involved in that community. People are free agents in a way in which the sub-systems of an animal or ecological system are not. Evolution has reduced the variety of states of the subsystems of an animal or an ecological system to very few states leaving little to be done by the managing brain and nervous system even if there is one. There is a much more complex set of interrelations to be maintained between the subsystems of organisations and people in a community not necessarily directly relating, but which nevertheless need to be maintained. Firstly, I will consider the maintenance of the external relationships, and then subsequently the maintenance of internal relationships.

## 8.3 Community and Purpose

For any animal the first priority is survival; survival for an animal means survival in its specific econiche. That econiche is contained in an ecosystem which in turn is shaped by the local geology, the shape of the land, the local weather, and the co-living species. The species homo sapiens evolved from its ancestors as a social animal. New members of ancient and modern hunter-gather groups are born into an ecosystem, and as children learn how to live by watching and listening to members of their group. At some point in the history of homo sapiens and its ancestors the skills in the manufacture and use of tools were discovered and developed. The development of these skills increased the variety of ways in which group members could relate, and therefore the increased the potential states of the group. The important point to note here is that in essence skill development and maintenance lies at the heart of trade and trading relations between communities. In the first instance the skills were those which exploit natural resources; the development of the ability to manufacture hunting tools, pottery, clothing, and cultivate crops. But of course today the variety of possible trading relationships is enormous.

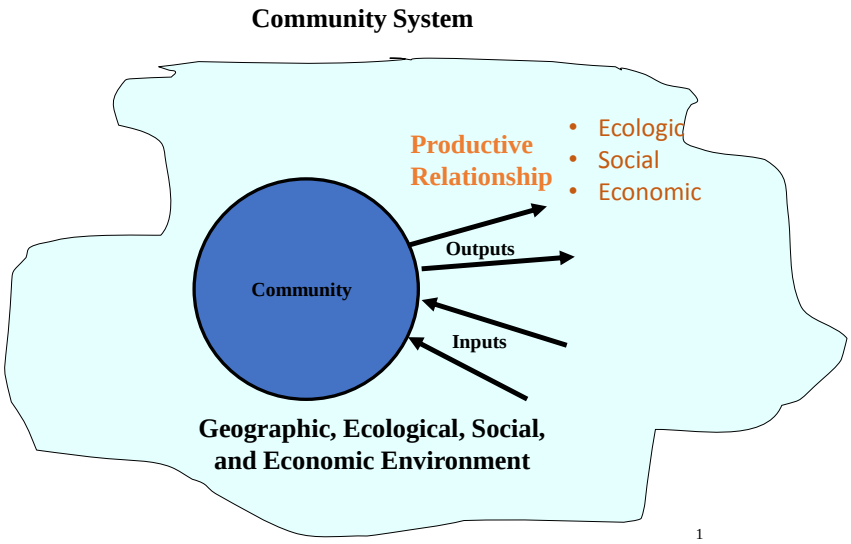


*Figure 8.2: A community in its environment*

A community seeks to survive but in what way is the community going to relate to the environment in which it resides? I write these words sitting in a small apartment in a town which decided in the 1970's to take advantage of its immediate coastal environment and determined that it would become a seaside holiday resort. It embarked on a massive building programme of constructing many small apartments, and also a marine lake for families and others not wishing to brave swimming in the Atlantic Ocean. In the winter it has a population of 1,700, in the summer 25,000. By doing this it became prosperous in the current world, but of course the question now is can it adapt to the changing world of increasing sea levels and fiercer storms. In this case both the individual community and the species of seaside holiday resorts is challenged.

My home town was a prosperous industrial town of the industrial revolution that has been long in decline. In 2017 two community enterprises came together to attempt to rescue the town's semi-derelict community college to teach the theory and practice that will be necessary to counter climate change. It is an ambitious project to start to build a new green economy, and an attempt to answer the question of how my home community is to relate to the outside world in a new positive way. The question of how a community should relate to its outside world is a question that should be asked and answered for all communities of every type and size. What is this country, region, city, district, town, etc for? Or what does it wish to be? – these are not questions that I have heard often posed, but they are fundamental to sustainability. In most cases the restrictions imposed by ownership of community assets residing in the outside environment and not inside the community in question will prevent the community answering the question to its own satisfaction at all. History teaches us that without the ability and control to answer the question for itself, then a community will be overwhelmed by forces beyond its control at some time. Think about the closing down of the UK coal industry in the 1980s for example, when some communities lost their reason for being. Communities at all levels in large part lack the mechanisms for governing in order to be able to come together to consider the ways in which they

would seek to fit into a trading network of communities, and relate in a positive way to the earths ecological systems.

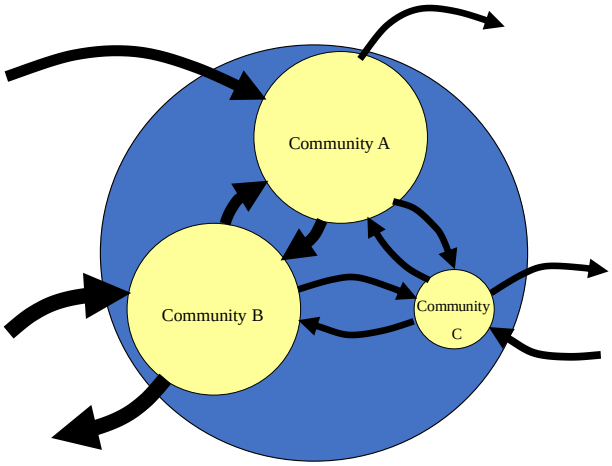


*Figure 8.4: Trading communities*

In practice what does this mean? How far could a community actually be self-sufficient? In our modern world most communities are not self-sufficient but need to contribute to the outside world in order to take in goods and services which it is unable to supply for itself. How will each community relate to other communities in the outside world – what trading relationships should it establish and what should it do for itself? Many communities struggle unsuccessfully against the almost completely unregulated feedback loop of capital creating more capital which has led to over-centralisation and exploitation Piketty 2020). We have much to learn from those peoples of the world who live sustainable relatively self-contained lives in harmony with their environment.

A community government will need to track the outside world, to watch trends and suggest changes and ensure that the outside world knows about the goods and services it can supply. It needs to ensure that the organisations that are needed to sustain its population and its relationship with the outside world are present and thrive. Therefore surely the first necessity of sustainability is to ensure that control is not passed to the outside by allowing outside ownership of community assets? This seems to be the opposite strategy to that which government agencies that I have interacted with have pursued for the whole of my lifetime. The mantra has always been that "we must attract outside investment", that is give away our control. No wonder *'take back control* proved to be such an attractive slogan in the UK. A community must achieve a balance to allow in new ideas and learning, but not allow a critical loss of control. The second necessity of sustainability is to have the institutional ability to understand the relationships which the community has with its environment, both social and ecological, and the ways in which it must maintain the knowledge and skills by which the communities trading relationships are maintained.

I would propose that we need to be clear that in considering government for sustainability there are dimensions to government that is now substantially missing from our democratic institutional structures. At present these institutions are organized to cover social aspects of governing, but not the skill aspects of governing, nor really the ecological aspects of governing, that are required to develop and maintain inter-community trading relationships, and right relationship to the ecosystems of the earth.

## 8.4 Constitutional Guidelines.

In Chapter 4 I explored the consequences of moving to modelling an organisation in a systemic way starting from considerations of holding steady in a changing environment and having to deal with both internal and external disturbances. This approach resulted in a layered fractal structure. That layered fractal structure is of course the reason for fixing on the word 'community' because it is a word which is essentially fractal in nature, in that it is used to describe a system in focus as is required for a systemic analysis. Figure 8.3 reproduces figure 4.11 now illustrating the layered structure of a community government and its relationships to its environment and to the sub-communities and sub-sub-communities.

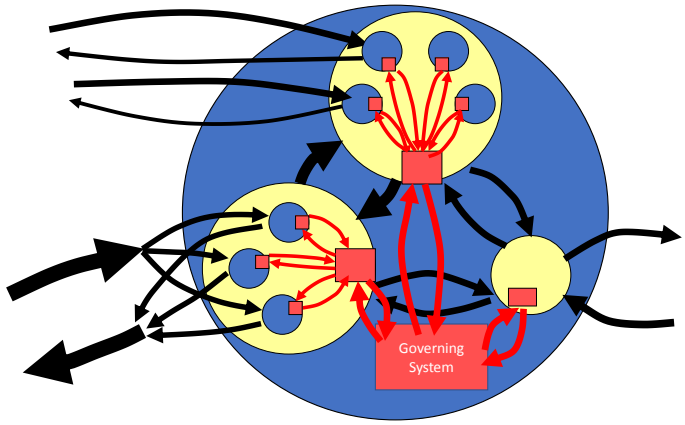


*Figure 8.5: The Layered Community Structure*

Many governments have evolved to have a layered structure, but it has to be said that the relationship between the layers does not seem well understood. In the UK in 1977 a Scottish Member of the United Kingdom Parliament Tam Dalyell posed a question that is still a subject of controversy a generation on; what was dubbed the 'West Lothian Question'. The question asks - Should Scottish Members of Parliament vote on

issues concerning only the governing of England? This is exactly the question of how adjacent levels of management should relate that was resolved in chapter 4, but I would like to set it out in this context in more detail.

The key to solving the West Lothian question is in finding a way for conflict to be avoided if there are two governments, with one whose domain of governance includes the other. Perhaps most importantly, if it is possible to find a principle or principles upon which the relationship between two overlapping levels of government can be constructed, then we can define the relationship between any two levels in a multi-level system. As was described in Chapter 5 all team games solve this problem. To recap in any team game there are a set of rules which apply to all the players taking part in a game, the metasystem. Within this agreed governance framework each team and its players have the freedom to play their game as they wish and take their own team decisions among themselves. The rules of any game give rights to players, 'freedom to' act and communicate in certain ways, but also provide constraints curtailing freedom, giving players 'freedom from' being on the receiving end of other particular acts and communications. A team can on its own account set higher standards of behaviour, but not lower, and they can certainly decide their own strategies of play. This relationship between the whole group rules (the framework which establishes the game) and the subgroup rules (the strategies that a team uses in taking part), and the way in which the two levels relate is an example of governance in the form needed to provide the answer to the West Lothian question.

The whole community government is concerned only with this whole group framework and the issues associated with its establishment and maintenance. In normal circumstances there can be no concern with internal matters of any sub-community, just as is the case for the sovereignty of nation states within international law. The key to understanding the relationship between two levels of government is that there must be restrictions on both the upper level and the lower level on what can be decided, what legislation can be put in place. There is inevitably a greater diversity of views across the larger group than across any sub-community. The area of agreement on a framework will of necessity be on a minimal set of agreed rights and constraints. The decisions of the whole community government must be restricted to those affecting only the whole community in constructing and maintaining this framework.

In the example of England and the whole of the United Kingdom, issues concerning England only should be considered and decided by a body or bodies governing England: an English parliament or appropriate regional parliaments. Each of these must be sovereign alongside the Scottish, Welsh, and Northern Irish parliaments within the common United Kingdom framework set by a United Kingdom constitution. With this principle as the starting point in designing a governing structure, the problems we face in that design are enormously simplified because the principle can be applied to distinguish the functions of any two adjacent levels in a multi-level governing system.

However, in adopting this principle we consign to the medieval history books the principle of sovereignty as it is currently defined and used. At present the government of a larger community can interfere arbitrarily in any way at any time it deems necessary in the smaller contained community. In the past sovereign kings and queens

have not been renowned for their open, informed, fair and just decision making. The notion that there is a hierarchy in which the higher echelons can interfere at will in the lower echelons must be abandoned. Powerful and unconstrained actions in the upper echelons of a hierarchy certainly do not give rise to open, informed, fair and just governance, but more likely give rise to moral and financial corruption. In my experience it seems that those in the higher levels of a hierarchy often seek to perpetuate their own position and power rather than govern as representatives of the population.

What do we gain from defining the relationship between levels in this way? At one extreme of decision making it is clearly a fantasy that a king, a queen, a pope, a prime minister, or a chief executive officer can be infallible, and all-seeing. All human beings have a limited capacity to understand the enormous complexity of the world in which we live, whatever their role in it. They do not have the necessary variety of potential command. The collective knowledge of the governing body of the larger community containing the smaller is limited. Even a few members representing a city in a national government living for a large part of their time at some distance from that city can never act collectively as intelligently as a local city government body of many more people in every day touch. So in structuring any governing system, it is as essential to prevent interference from those who are not affected and do not understand, as it is to give access to those who are affected and do understand.

Narrowing the domain of decision making in this way, will focus the minds of those involved in the whole community government on a range of issues and roles which can be better encompassed by a human brain, so increasing both the effectiveness and efficiency of governing structures. This at least maximises the possibility that in any government the people affected and the people who understand are both involved as far as possible in the decision making processes which affect them. This approach to structuring will tend to decentralise decision making, since unless it can be argued that a decision affects the whole community group, it cannot be considered by the government of the whole community group.

## 8.5 A Systemic Approach to 'Democracy'

The first example of 'democracy', and the origin of the word, is from Greece. In the city state of Athens in ancient Greece all citizens took part in governmental decision making - what we now call *direct democracy*. In ancient Greece women and slaves were not citizens, and therefore not directly involved, but in the way we think of it now, in a *direct democracy*, every adult is a citizen. However, who is or is not a citizen even in our modern world is not a simple question for any community, there has always been movement of people from community to community spreading knowledge and understanding. When does an incomer become a citizen able to take part in the governing system? What qualifications should there be?

It makes sense to bring to bear on decisions all the available knowledge and understanding of the issues involved that exists in a community, and also all the available understanding of ramifications of any decision, how it will impact on the members of the community. This is essential if we wish to have the best possible

model in a community control system taking note of the Conant-Ashby Theorem. But central to this purpose is that there must be built into the governing system the necessity for there to be discussion to bring together the different perspectives which will exist on any situation. From that discussion agreed solutions to the complex problems of governing will emerge. As outlined in the previous two chapters. each citizen has a unique personal set of experiences which give rise to their view of the world. On any issue there can be a variety of views, both informed and uninformed, and in order to reach a decision there must be that time for open discussion to enable ideas to be challenged, misinformation to be countered, and a decision to emerge. In this process great care must be taken in this discussion to prevent any group even a majority of citizens curtailing the discussion to impose its will without that informed discussion. John Stuart Mill writes about the necessities and problems with both the informal system of societal customs and the formal legal system in constraints on personal action in his writing *On Liberty* (1987) including:-

> .. 'the tyranny of the majority' is now generally included among the evils against which society requires to be on its guard.

Mill 1989.

## A House of Representatives

The problem we have in making a comparison between the government of ancient Athens and modern communities is that from my definition communities can be very large, up to and including the community of humans on planet earth. In Athens every citizen could be involved in governmental decision-making, but in a nation state with a typical population in the millions or tens of millions this is not feasible. In the modern situation it seems to be generally accepted that '*representative democracy*' is the ideal to aim for. Instead of every adult being involved we choose representatives, creating a body to take decisions on our behalf. The meaning of '*represent*' in this context according to the dictionary (e.g. Chambers 1998) is '*to stand for*'. The purpose of this 'standing for' is that the representatives take governing decisions on behalf of the people of the community as a whole, to the benefit of the whole community. If representatives are going to *stand for* the people of the community as a whole, then they must carry with them to their task, as far as possible, the rich variety of background, culture, and attitudes of all the people of the community which they represent. Culture varies from place to place, from organisation to organisation, and from profession to profession; a governing system must capture as far as possible this variety. If representatives are taking decisions standing for a community of people then there must be as far as possible an alignment with, and understanding of, this rich variety in that controlling body. Only then can they *stand for* the population in deciding what is appropriate, and what is not, making those decisions to the benefit of the community as a whole.

But then the question arises as to the ability and desirability of a small number of people to represent a large number in this way. What is then at issue is the quality of those decisions since all citizens are not involved. The fractal constitutional structure explored in the last section does alleviate this problem restricting the range of decision making at any level of community, but it does not entirely solve the problem. The implications of the Conant-Ashby Theorem enjoin us to seek to establish in the

controlling governmental system the best possible model of the community and its needs and problems. How could this be done?

The systemic control system proposed by Beer, the Viable System Model (VSM), explored in the previous chapters, and illustrated in Figure 8.6, is divided into five sub-systems, System 5 is to embody *the being* of the whole system, and is the guardian of the identity and purpose of the system as was described in section 4.7. An animal is itself, its *being* developed by coevolution with the environment within which it lives. In the modern world a community has the opportunity to develop an understanding of its being and decide how it wishes to relate to the environment. In a direct democracy this is the responsibility of the whole collective of the citizens, in a representative democracy the responsibility of a *House of Representatives,* standing for the whole collective of the citizens. As guardian of the identity and purpose a House of Representatives' function is to decide on what is appropriate and what is not in proposals it receives and make decisions standing for the people of that whole community, but most importantly, the fractal point, it can only make decisions which apply to the whole community. I explored examples of what might be the identity and purpose of a community in section 8.3 at the beginning of this chapter.

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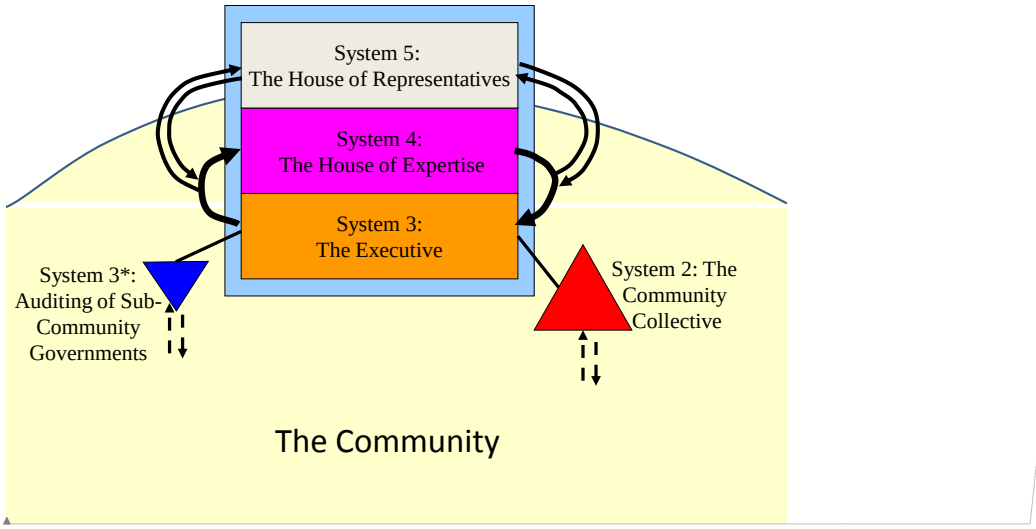



Figure 8.6: Community governing systems

It is essential that there is understanding in that body of the rich variety of knowledge, understanding, and perspective in the community. Any democratic government therefore **by design** consists of groups of people representing their community who come from different backgrounds having differing perspectives on the complex situations they face, that they must come to an understanding of, and come to decisions about. The decision making process of democracy is necessarily through inclusive discussion, which requires developing agreed models of complex situations as discussed in Chapter 6. This is not at all the way our current governing systems are structured. It is more usual for governments to strip out the variety of perspectives, UK political parties are typical in that the choosing of parliamentary candidates to stand for election as

'representatives' has been decided in large part centrally to fit with a particular political view. This is done often even without the candidate having any experience of the constituency concerned; a sure way to achieve incompetent governing. To achieve competent governing it is necessary to maintain an ongoing feedback loop between a House of Representatives and its community to ensure evolution with the community, and to counter misinformation and misunderstanding. To achieve this I would suggest also that frequent changes of representative are necessary to counter the possibilities of groupthink within the House of Representatives; representation cannot be a permanent career.

## The House of Expertise

The present system of representation has hardly changed from the time when nation states were largely rural farming societies, when the differences in working practices across nation states were relatively small. Then a division of the nation state into geographical areas could by and large encompass the knowledge and understanding across that nation state. That has ceased to be the case for some considerable time. A geographical constituency structure is no longer adequate to produce a representative understanding in a governing system. In the New Scientist magazine of the 24th April 2010 Michael Brooks reported that out of 650 members of UK parliament, 584 have '*no political interest in science and technology*'. Without interest there can be no understanding, and yet understanding of science and technology is clearly a must for viable government in the world in which we find ourselves.

Understanding within the governing system could be vastly improved by having representatives of expertise areas. It seems essential to suggest that alongside any *House of Representatives* based on geographical communities, there also should be a *House of Expertise* and this requirement should be a permanent part of the structure. Such a House of Expertise should be elected from communities based on skill and knowledge in working practices. This would be a second fractal structure in which all citizens play a part. In today's world it is not difficult to generate a set of constituencies covering the range of skills present in any geographical community and each and every citizen of that community to be registered and to vote in one of those skill-based constituencies, just as we do now for the geographically based constituencies. It seems logical to encompass as far as possible all differences in our representative structure. Trade guilds, and trade unions are examples of organisations based on skill areas that have existed for many years.

The House of Expertise is the community managing System 4 (Figures 4.13 and 8.6) as proposed by Beer. Its purpose is to monitor the environment of the community, learn, and propose changes that it feels are necessary for the survival of the community. It must monitor all relevant aspects of the external environment ecological and social, maintaining necessary external dialogue and trading relations, and proposing changes necessary for survival of the community. Of necessity, therefore, it should embody all the skill areas of the community and be a centre of learning and innovation. It is *the higher brain* of the community where learning and adaptation originate. Therefore, an integral part of the function of the House of Expertise is the maintenance of the education system of the community. My experience of governing secondary schools led me to the conclusion that an educational opportunity is missed in that students are not engaged in the analysis of the needs, current and future, for the maintenance of the community in which the school is situated. Similarly students of

the primary and the tertiary education system could be performing the same function for their communities at the appropriate fractal levels.

A 'citizen's wage', sometimes labelled a 'universal basic income', has an educational role to play in enabling time and space for creativity and entrepreneurship, those not immediately engaged can reskill to provide for coming changes, or be available when there is a sudden demand increase signalled from the Community. Such a scheme would maintain redundancy in a community, just as all bee colonies maintain redundancy in order to cope with changes in their environment. Bee colonies are organised in this way so that they can and do operate sustainably.

### The Executive

The third sub-system of the community governing system is the *Executive.* In Beer's VSM this includes System 3, System 2 and System 3* (Figure 8.6). The purpose of the Executive is to engage and manage the sub-communities, playing the role of *the lower brain and nervous system* of the community. Its overall purpose is to maintain the operations of the system as discussed in Chapters 4 and 5. The most important of these is System 2, because of the complex nature of maintaining the internal coherence and stability across sub-communities. The tasks of this part of the Executive cannot be encompassed by a centralised body and must of necessity be operationalised by both the government of the whole community and the governments of the sub-communities. This I have designated as the responsibility of a *Community Collective*, (Figure 8.6) which is a body consisting both of representatives of the sub-communities and representatives of the whole community and will be discussed in the next section.

System 3 itself, is a system meta to the governing systems of the sub-communities with the purpose of maintaining a whole community view of the activities of the sub-communities. As discussed in Chapter 5 and 6 it allocates to those subsystems the resources that are required to meet particular challenges from the external environment. This would include building and putting into action new organisations, in the same way as putting resources into building and putting into action new learning in any animal. My learning of music and piano playing, referred to in Chapter 6 is such an example, the creation of new understanding and new skill. The last part of the Executive responsibility is of *audit,* System 3*, to ensure that the picture presented to the Executive of each sub-community by that sub-community's House of Representatives is an accurate one. These mechanisms with those of the Community Collective constitute the feedback loop between the whole community government and the sub-communities.

The structure of Beer's Viable System model envisages a continuing discussion between the Executive and the House of Expertise informing each other of the state of viability of the community. Are the efforts of the citizens of the community, the inside and now (the current understanding in the Executive), aligned with the future evolution of its environment (the current understanding in the House of Expertise)? If change is necessary then agreed change, emanating from the House of Expertise's learning and creativity, and the ongoing discussions between these two bodies, is proposed to the House of Representatives for their decision - are they in line with the culture and ethos of the community? These ongoing conversational feedback loops are illustrated in figure 8.4 by the curved black arrows. The House of Representatives is the decision-maker, it sits, as required by our understanding of control systems, meta-systemic to the ongoing Executive - House of Expertise discussion. The Representatives are therefore required

to be meta – that is outside, above – both the House of Expertise and the Executive. Understanding of these roles is vital for good government. At the larger scale I would propose that one citizen could not be a member of more than one of these three subsystems, House of representatives, House of Expertise, and Executive, but this may not be possible at the smaller scales, e.g a small village.

Given the complexity of governing tasks (it should be no surprise that it is complex) it does not seem unreasonable to require that any potential representative or executive appointment undergo professional development, as in any other profession that requires decision making in complex situations. This is an accepted normal process that applies in such professions as medicine, the law, architecture and others. If a person aspires to be a manager of any organisation then they require both the specialist knowledge of that organisation and knowledge of managing, both sociological, and cybernetic. The route to representative must be open to all, which will require some thought into how the necessary understanding, openness, and true representation can be achieved. Perhaps there should be a rule that a citizen could not be a community representative without having been a sub-community representative, and terms of office limited to prevent representatives becoming separated from their community; all being fractal requirements in line with the fractal systemic structure of governing, but allowing many to participate. Choice by sortition rather than election seems attractive, but if by election, certainly proportional representation is a must to ensure multiple perspectives and experience are present.

### The Community Collective

In sections 5.4 and 5.5 I explored achieving coherence between a group of sub-systems, applying the Sub-optimisation Theorem, the last of the three cybernetic rules which apply to all managing situations. It shows that in order to optimise any variable for the whole system, sub-systems must be prevented from optimising that variable for themselves in isolation from other sub-systems. This is achieved by imposing a frame within which they must work which enables the co-operation necessary to bring coherence to the whole. For example it is well understood in the world of soccer that having a prima donna in your team does not lead to a high performing team. But, it does not seem to be generally understood in the world of government that in states with high inequality both economic and social development are damaged (Piketty 2020). It is to be expected that if organisations or sub-communities are allowed to maximise their own well-being then overall well-being is damaged.

For a community preventing sub-optimisation splits into two parts, the first, maintaining the structure of the community: that is maintaining the economic balance between the sub-communities - enabling necessary change in boundaries between sub-communities, maintaining cohesion through trading relations, building of new organisations for a changing environment. The second part is the development and maintenance of the underlying framework of rights and responsibilities that applies to all people and organisations within the community. These two ongoing tasks and their interlocking nature are illustrated in Figure 8.7.

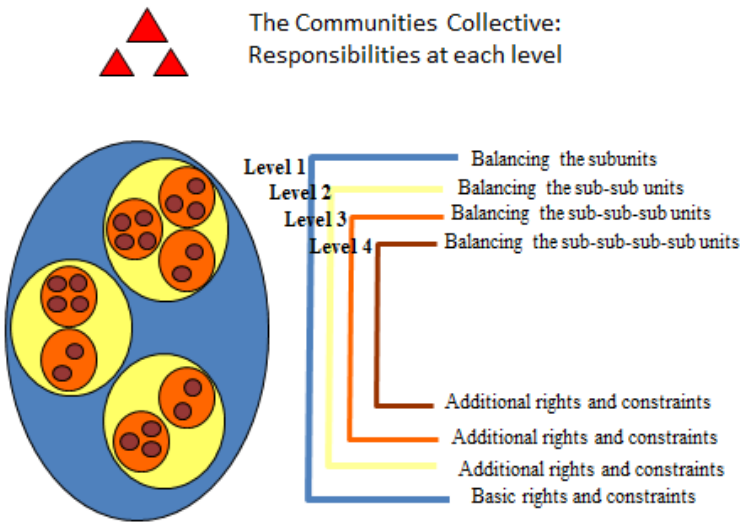



Figure 8.7: The purposes of the Community Collective

In Chapter 5 I used government as the principle example in showing that a whole community must develop and manage a minimal frame within which sub-communities at the next level must adhere if it is to avoid the problems of sub-optimisation. Each sub-community can add additional constraints to the minimal frame but not take anything from the constraints imposed.

Government creates laws which describe rights and constraints. The impact of the governing rules on rights and constraints on me, a member of the community, or on an organisation serving the community is to indicate that there are some things that I can do and some things that I can't, some things that can be done and some that can't. It is this that forms the frame of acceptable things that can and can't be done. This frame deals only with things of relative importance, for example it says that I can't take things for my own use that others habitually use, and I shouldn't kill anyone. They protect me from having my tools stolen, or from being killed. The regulations act in both directions limiting how I affect others and how others affect me. It doesn't say that I should only use a circular-ish spoon for eating soup rather than an oval shaped one, although such cultural regulations do exist. So in any society there are some regulations that are informal, and some that are formally enshrined in law, but all change and evolve with time. As Piketty (2020) argues the framing within which we live our lives is largely constructed by the stories we tell ourselves. There are always many more options for developing the formal legal structures than those which are adopted, and they are adopted because they seem to be the obvious solution dictated by the current framing narratives.

The simplest part of this aspect of governing is that it is a system to regulate relationships between citizens, or perhaps to constrain the behaviour in relationships to those considered acceptable. The formal part of this is the legal system. As discussed in section 5.5 the whole community frame is a minimal set of regulations which apply

to all sub-communities. The important point is that in the framework there can be no discrimination for any reason between individuals within a whole community, but each sub-community may add to those regulations according to their custom and practice as long as the whole community regulations are not breached. This gives the structure of the fractal layered framework. This is illustrated in Figure 8.7 reproduced from Chapter 5 Figure 5.X. The colour represents the framework at a particular level, thus the common frame for the whole community is represented by the white colour. For each step to a sub-community a small amount of colour is added to illustrate the extra additions to the frame. It can be seen from the illustration that it is possible for communities with very different cultures and ways of living can exist in such a fractal structure.

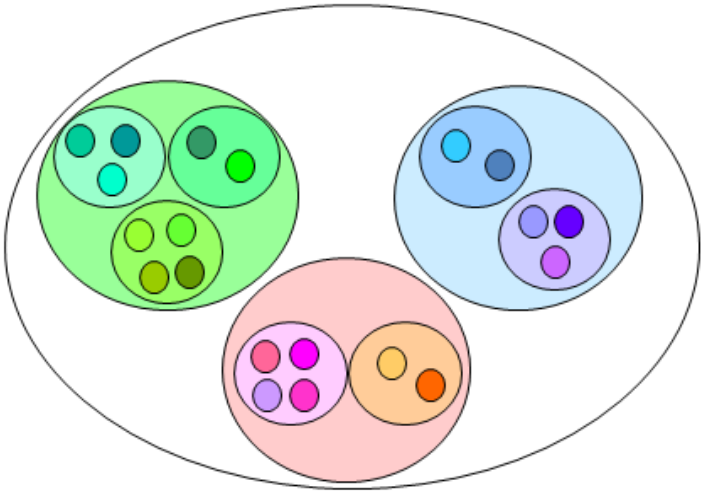
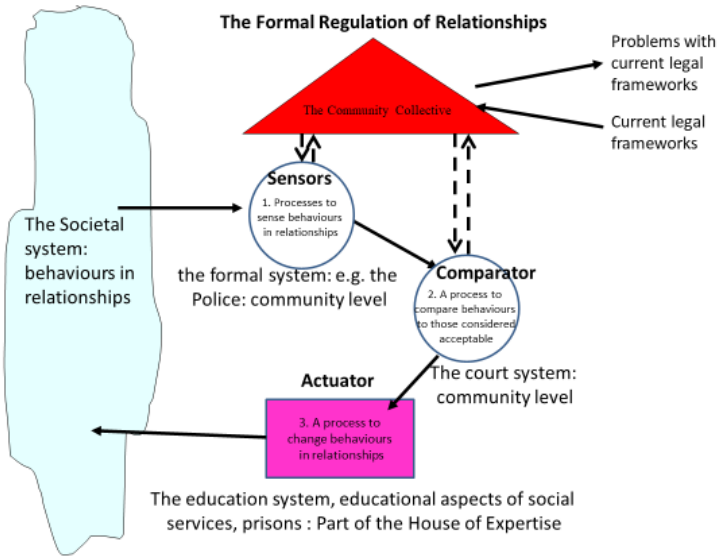


Figure 8.8: An illustration of the layered structure of the internal governing frame

The situation for a government is yet more complex. Whilst a government is concerned with relationships, it is not just those between individuals. In any community there are in addition to relationships between members of the community, relationships between organisations in the community, and relationships between members and organisations. Just as in many ecosystems there are organisations present in some communities that operate at a larger community level. In the ecology of the planet, a large tree, or a top predator operates across many ecosystems, and modifies or even creates ecosystems within its influence range. There are many business organisations which span geographic communities and even create geographic communities in similar way. Employees, and supplies are drawn from a range of communities and products and services are also distributed and used across a range of communities. The three ranges are not necessarily the same. In our current world nations suffer from business organisations playing nations against each other, this points to a need for a world frame. The agreed frame across sub-communities at all levels is of utmost importance to eradicate this behaviour, and this leads to the conclusion that the frame governing

the standards which apply to an organisation must be set at the level which encompasses all its operations.



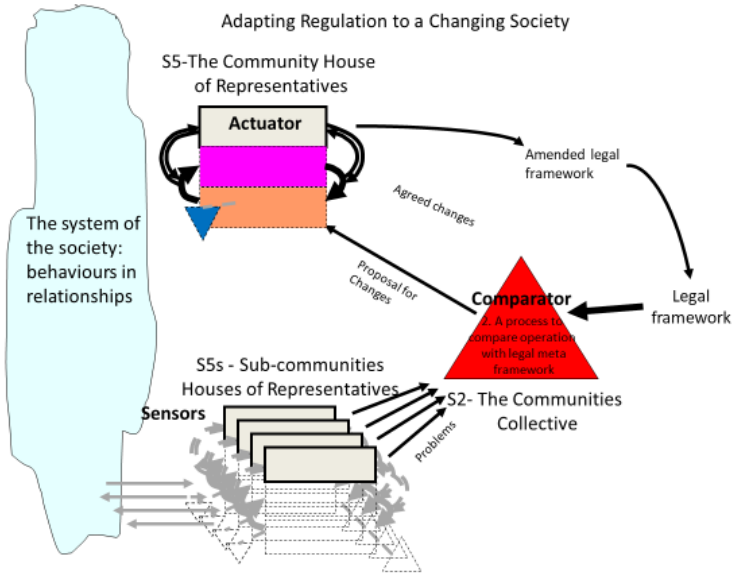

Field Code Changed

Figure 8.8 The formal community regulation system

These frames are control systems as I discussed in Chapter 5. The first aspect of the community control system is social regulation of relationships. This could be someone detected behaving badly and being told, or losing friendship, or an organisation behaving badly and losing custom. There are many examples of ways in which people themselves act as sensors, comparators, and actuators in changing their own behaviour in an endeavour to put pressure on miscreants to change theirs. The formal system, that is the legal system, is illustrated in Figure 8.8. The formal system picks up the problem when a matter is serious enough to be reported to the police or other regulatory body, who then have the duty to investigate and bring a formal charge of transgressing the legal framework. The court system has the duty to compare the model of the situation produced by the investigation with the accepted framework standards. If it is found that the framework has been transgressed then sanctions will result. These sanctions are of little value if the behaviour of the transgressor does not change. Therefore the sanctions must include the purpose of changing the models which guide the behaviour of the miscreant. This is the actuator which brings about the change and corrects or should correct the bad behaviour.

As a society evolves, so must the formal legal system. When a problem is perceived with the operation of the current sub-communities framework the sensors, comparator, and actuator, subsystems of the Community Collective, and part of the Executive has a duty to bring problems to the ongoing discussion between the Community Executive and the community House of Expertise. It is important here to remember the levels' relationships, the community sets the frame for its sub-communities and may change

that frame. A community cannot change the frame within which it sits but can of course bring problems to the attention of the meta-community collective. Building on Figures 5.2 and 5.3 and Figure 8.6 I come to Figure 8.8 describing the necessary control system to effect changes in cybernetic terms and in terms of the proposed democratic system.




Beer's conception of the Viable System Model (VSM) proposes that there is ongoing feedback communication between System 2's, i.e. the Community Collectives, between levels. Therefore the collectives themselves form a fractal structure. This fractal structure will include the operational subsystems of the Community Collectives, that is the court system and judiciary on the one hand, and the police and other behavioural formal sensors on the other. Both these should also be fractal structures but needing further analysis to see how far from that they are now, and of course they have their own governing frameworks.

## 8.7 Conclusion

The situation that Forrester describes in the quotation at the head of this Chapter has changed little in the years since 1970, although now Piketty has gathered a considerable weight of evidence on the practice that has been tried and suggests in his book possibilities to investigate(Piketty 2020). I suggest that applying systemic logic should also be a guide on the path to better governing. A governing system is a system to regulate relationships. Relationships are the interconnections between things, very much the subject matter of systems thinking. Governing is a process of holding steady in a changing world, and the subject matter of cybernetics, exactly as both Plato and Ampere envisioned. What is surprising is that this approach seems entirely absent from the literature on governing, even from most current writing. When I analyse the workings of the United Kingdom government, the one I know the best, it accords to none of the three cybernetic laws, nor with the best practice of ensuring the well-being of all citizens or achieving right relationship to the natural world. Human society and its

relationships to the natural ecosystems of the planet is a hugely complex system, therefore, it seems to me that any attempt to analyse and discuss governance in any conceptual system other than a process systemic conceptual system is doomed to failure.

Most of us I would imagine wish to live in peace, without harming others, not being caught up in the stories which competing elites create to further their position, and being able to get on with our chosen lives. We need the communities in which we live to survive and be reasonably prosperous so that we can maintain our own livings. Those we elect to positions of governing, our representatives, have firstly the task of living in and listening to the society they represent. Societies change over time, and the stuff of government - constitution, laws, regulations - must change with it. Representatives have the task of using their knowledge and understanding to translate the changes into amendments to the stuff of government. This stuff of government should ensure that we can live in peace, without being harmed by others and to help maintain all the members of its communities. At root then, the task of our representatives is to ensure that the values of the society are reflected in the laws and regulations, and that all have the possibility of a decent living. This is the purpose of managing a society.

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