Social Systems: Intervention, Governance and Viability

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Abstract

Previous papers introduced the concept of Constraint Analysis and examined recurring patterns of stability, instability, and misalignment within social systems. While understanding the causes of social stability and instability is an essential first step, explanation alone does not address a central practical question: how can social systems be influenced in ways that improve outcomes?

This paper introduces the general principles linking intervention, governance, and viability within social systems. Building upon the Enhanced Morphogenetic Cycle, intervention is conceptualised as the deliberate modification of constraints with the intention of influencing future behaviour and outcomes (Archer, 1995, 2003; Challoner, 2026). The paper argues that social instability often reflects patterns of constraint misalignment and that effective intervention to improve system behaviour depends upon understanding the causal networks and constraint structures that shape it.

The analysis further argues that intervening agents are themselves components of the systems they seek to influence and are therefore subject to their own constraints, limitations, and sources of error. Consequently, intervention requires governance. Governance is defined as the regulation of constraints affecting collective behaviour, while meta-governance concerns the regulation of governance processes themselves. The paper explores the resulting governance hierarchy and examines its practical limits.

A further argument is that interventions should not be evaluated solely according to their immediate objectives. Instead, they should be assessed in relation to their effects on system viability. Viability is understood as the capacity of systems to persist, adapt, and continue functioning through time, and must be considered across interacting systems and multiple levels of organisation.

The paper concludes that social systems are neither fully predictable nor beyond understanding, and neither fully controllable nor immune to influence. By viewing intervention as constraint modification, governance as constraint regulation, and viability as an evaluative principle, it becomes possible to approach social change in a more systematic, reflexive, and adaptive manner. The overall perspective is one of pragmatic optimism: social systems are complex, but they are not incomprehensible, and informed intervention can contribute to improved social outcomes.

1. Introduction

1.1 From Diagnosis to Intervention

Previous papers introduced the concept of Constraint Analysis and examined recurring patterns of instability in social systems (Challoner, 2026a, 2026b). It was argued that social behaviour does not arise randomly, but is shaped by interacting constraints operating across multiple levels of organisation. It was explained that a system's circumstances, conditions and constraints, jointly known as constraints, were physically real but complex causal networks. Where they become aligned, social systems tend towards stability and persistence. Where they become misaligned, instability, conflict, and maladaptive outcomes may emerge.

The analysis further suggested that many recurring social problems arise not from the intentions of individual people alone, but from the interaction of structural, cultural, and agentic constraints within the wider social system. Declining institutional effectiveness, economic disruption, political polarisation, environmental degradation, and social conflict may therefore be understood as manifestations of deeper patterns of constraint misalignment.

Understanding the causes of instability is an important first step, but it naturally raises a further question. If the sources of instability can be identified, can they also be modified? More generally, if social systems are shaped by constraints, can deliberate changes to those constraints improve social outcomes?

This paper introduces the general principles of intervention within social systems. It argues that intervention is best understood as the deliberate modification of constraints with the aim of influencing behaviour and outcomes. It further argues that intervention itself must be subject to governance and evaluation, since interventions can either improve or reduce the viability of the systems they affect. The detailed mechanisms of intervention and the ethical trade-offs involved in intervention design are examined in later papers. The purpose of the present paper is to establish the conceptual foundations upon which those later discussions will build.

1.2 Intervention as a General Systems Process

Intervention is not unique to human societies. Throughout nature, adaptive systems continuously modify their environments in ways that influence their own future behaviour and viability (Beer, 1979). Plants alter the chemical composition of the soil around them, animals modify habitats through nesting, burrowing, or migration, and living organisms regulate internal conditions through a variety of homeostatic processes. In each case, the system changes aspects of its environment in ways that influence future outcomes.

From a systems perspective, intervention can therefore be understood as a natural extension of agency. Whenever a system is capable of perceiving conditions, selecting between alternative courses of action, and acting upon its environment, it possesses the potential to intervene. The complexity of such interventions may vary enormously, ranging from the simple behavioural responses of organisms to the highly organised actions of governments, institutions, and societies.

Within social systems, intervention becomes particularly important because humans possess the capacity for reflexive thought. Individuals and organisations can not only respond to current circumstances but can also anticipate possible futures, evaluate alternative actions, and deliberately attempt to alter the conditions that shape behaviour. Social interventions therefore represent a specialised form of a more general process found throughout adaptive systems.

This understanding aligns naturally with the Enhanced Morphogenetic Cycle (Archer, 1995, 2003; Challoner, 2026c). Agents observe conditions within their environment, interpret their significance, and act in ways intended to influence future outcomes. Intervention is therefore not an external addition to the morphogenetic process but one of the principal mechanisms through which morphogenesis occurs. Understanding intervention is therefore essential to understanding how social systems adapt, stabilise, and change over time.

2. Why Intervene?

2.1 Instability and Maladaptation

Intervention is generally motivated by the perception that a system is no longer functioning as desired or expected. In some cases, this may involve an obvious crisis such as economic collapse, environmental degradation, war, or institutional failure. In others, the problems may emerge more gradually through declining performance, increasing conflict, reduced adaptability, or the accumulation of unresolved tensions. Although the symptoms may differ, they often indicate that existing patterns of behaviour are no longer producing satisfactory outcomes.

From the perspective of the Enhanced Morphogenetic Cycle, such situations can often be understood as forms of instability or maladaptation (Archer, 1995; Challoner, 2026c). Social systems operate within complex networks of interacting constraints that shape behaviour and outcomes. When these constraints remain sufficiently aligned, systems tend towards relatively stable and viable patterns of organisation. However, changes in technology, resources, population, institutions, culture, or the external environment may gradually alter the relationships between constraints. As misalignments accumulate, previously stable patterns of behaviour may become increasingly difficult to sustain.

For example, a technological innovation may create new economic opportunities while existing institutions, regulations, or cultural expectations remain adapted to earlier conditions. The result may be growing tension between different parts of the system, leading to conflict, inefficiency, or declining performance. Similar processes can be observed in organisations that fail to adapt to changing circumstances, societies experiencing rapid demographic change, or ecosystems subjected to new environmental pressures.

Intervention becomes necessary when existing processes are unable to restore alignment or maintain viability. In some cases, systems may adapt spontaneously through the normal operation of the morphogenetic cycle. In others, agents may seek to accelerate, redirect, or stabilise change through deliberate action. Intervention can therefore be understood as an attempt to influence the future trajectory of a system when existing dynamics are perceived to be producing undesirable or unsustainable outcomes.

Importantly, intervention is not always motivated by crisis. Agents may also intervene to exploit opportunities, improve performance, increase resilience, or prepare for anticipated future conditions. Nevertheless, whether responding to problems or pursuing opportunities, intervention is ultimately concerned with influencing the conditions that shape future behaviour and outcomes.

2.2 Morphogenesis and Deliberate Change

Not all social change results from deliberate intervention. Social systems continuously adapt to changing conditions through the normal operation of the Enhanced Morphogenetic Cycle (Archer, 1995, 2003; Challoner, 2026c). As agents interact with one another and with their environment, they generate new patterns of behaviour, institutions, relationships, and cultural understandings. Many such changes emerge without central direction through the cumulative effects of countless local interactions. Languages evolve, markets adjust, and social norms develop largely through processes of self-organisation and adaptation.

Deliberate intervention differs in that agents consciously attempt to influence the future trajectory of the system. Rather than merely responding to existing conditions, they seek to alter those conditions in ways expected to produce particular outcomes. Governments may introduce new legislation, organisations may redesign structures or processes, and communities may undertake collective action to address perceived problems. In each case, intervention represents an intentional effort to influence future social development.

Within the Enhanced Morphogenetic Cycle, intervention enters through the reflexive capacities of agents. Agents observe existing conditions, interpret their significance, anticipate possible futures, and select actions intended to influence subsequent

developments. Intervention therefore represents a specialised form of morphogenesis in which future states of the system become an explicit object of consideration. The capacity to imagine alternative futures and act upon those expectations is one of the defining characteristics of human agency.

The distinction between spontaneous adaptation and deliberate intervention should not be overstated. Deliberate interventions occur within broader morphogenetic processes and are themselves shaped by existing structural, cultural, and agentic constraints. Equally, the outcomes of interventions are never fully under the control of those who initiate them, since they become incorporated into the wider dynamics of the social system. Intervention is therefore best understood not as the control of social change but as an attempt to influence its direction.

This observation has important implications. If interventions cannot directly determine outcomes, how do they influence social behaviour? The argument developed in the following sections is that interventions operate primarily through the modification of constraints. By altering a system's constraints, interventions can influence the range of possibilities available to it and thereby affect its future trajectory.

3. Intervention as Constraint Modification

3.1 Behaviour Emerges from Constraints

The central argument developed throughout this work is that social behaviour does not arise independently of the constraints within which it occurs. Individuals, groups, organisations, and societies all operate within environments shaped by interacting constraints. They influence the possibilities available to a system, the likelihood of particular outcomes, and the stability of resulting patterns of behaviour. Understanding behaviour therefore requires understanding the constraints under which it emerges.

Constraints vary in type. External constraints influence access to resources, energy, and space. Biological constraints shape the needs and capabilities of living organisms. Structural constraints arise from institutions, technologies, roles, and organisational arrangements. Cultural constraints influence beliefs, values, expectations, and shared understandings. Together, these constraints form the context within which agents perceive, decide, and act.

Importantly, constraints do not normally determine behaviour in a simple or mechanistic way. Rather, they shape the range of possibilities available to a system. A legal system does not force every individual to obey the law, but it changes the incentives and consequences associated with different actions. Similarly, a market economy does not dictate specific decisions, but it influences which activities are rewarded, discouraged, or made possible. Behaviour therefore emerges from the interaction between agents and the constraints that surround them.

This perspective helps explain why similar individuals often behave differently under different circumstances and why different individuals may behave similarly when exposed to the same conditions. Changes in behaviour frequently reflect changes in the surrounding constraint structure rather than changes in individual characteristics alone. For this reason, explanations that focus exclusively on either individuals or social structures often capture only part of the causal picture.

The concept of constraint spaces introduced during the development of constraint analysis provides a useful way of visualising this relationship (Challoner, 2026a). At any point in time, a system occupies a particular location within a wider landscape of possibilities. The behaviour of a social system changes as it moves through these spaces under the influence of both internal processes and external conditions. The configuration of constraints influences which pathways between stable configurations are accessible, which are difficult, and which are effectively closed.

Since constraint spaces represent the possibilities and pathways created by interacting constraints, influencing system behaviour requires more than simply attempting to control the actions of individuals. It requires understanding and, where appropriate, modifying the constraints that shape those actions. This observation provides the foundation for understanding intervention as a process of constraint modification.

3.2 Altering Constraints Alters Outcomes

Although agents often attempt to influence outcomes directly, lasting changes in behaviour usually occur when the constraint structures within which individuals, organisations, and societies function are modified.

This relationship can be expressed in a simple form:

Constraint Change → Behaviour Change → Outcome Change

The logic is straightforward. Changes to constraints alter the possibilities, incentives, costs, risks, or opportunities available to agents. Agents then adapt their behaviour to these altered conditions, producing different outcomes at the level of the wider system. While the process is rarely linear in practice, the underlying causal principle remains the same.

Many familiar examples can be understood in this way. Governments seeking to reduce smoking may introduce taxes, restrictions on advertising, or limitations on where smoking is permitted. These measures do not directly force individuals to stop smoking. Rather, they alter the constraints surrounding smoking behaviour, changing costs, incentives, and social expectations. Behaviour changes in response to these new conditions, leading to different public health outcomes.

Similarly, an organisation experiencing poor communication may introduce new reporting structures, collaboration tools, or decision-making processes. These

interventions do not directly create cooperation. Instead, they modify the structural constraints under which employees interact. The resulting changes in communication patterns may then improve coordination and organisational performance.

Changes in information can also function as interventions. Public awareness campaigns, educational programmes, and scientific research may alter how individuals understand their circumstances. By changing the information available to agents, such interventions can influence expectations, decisions, and collective behaviour. Cultural and epistemic constraints may therefore be as important as material or institutional constraints in shaping social outcomes.

The same principle applies across multiple levels of social organisation. Infrastructure projects alter physical constraints. Legal reforms alter institutional constraints. Educational initiatives alter epistemic constraints. Cultural movements alter normative constraints. In each case, intervention operates by modifying the conditions under which behaviour emerges rather than by directly determining behaviour itself.

This perspective helps explain why some interventions succeed while others fail. Efforts that focus solely on symptoms may produce temporary improvements without addressing the constraints generating the problem. In contrast, interventions that successfully modify key constraints may produce widespread and persistent changes in behaviour.

However, interventions do not all produce effects of the same magnitude. Some modifications to constraints have relatively limited consequences, while others influence much larger flows of matter, energy, or information within the wider causal network. Understanding why relatively small interventions can sometimes produce disproportionately large effects leads naturally to the related concepts of constraint influence and leverage.

3.3 Intervention and Leverage

Not all constraints exert the same influence on system behaviour. Some constraints affect only a small number of processes, while others have a more extensive effect. Consequently, interventions directed at different constraints may produce very different outcomes, even when they require similar levels of effort or resources. Understanding these differences is central to effective intervention.

Closely related to constraint influence is the concept of leverage (Meadows, 1999). The concept of leverage refers to the capacity of a relatively small intervention to produce disproportionately large effects within a causal network. Leverage arises when a relatively small causal input modifies a circumstance, condition, or constraint that itself regulates much larger flows of matter, energy, or information.

A simple example is a valve controlling the flow of water through a pipeline. The force required to move the valve may be small compared with the energy contained within the water flow itself. Nevertheless, altering the position of the valve changes the behaviour of the entire system because it modifies a much greater flow of energy and matter. The leverage arises not from the intervention alone but from its ability to regulate larger causal processes already operating within the system.

Similar principles apply within social systems. A change in a law may influence the behaviour of millions of individuals. A modification to organisational reporting structures may alter large flows of information and decision-making. A new communication technology may reshape patterns of social interaction across entire societies. In each case, the intervention itself may be relatively modest compared with the scale of the resulting effects because it modifies a constraint that regulates wider social processes.

Jointly, constraint influence and leverage explain why some interventions succeed while others fail. Efforts directed at highly influential constraints may produce widespread changes in behaviour, while interventions targeting less significant constraints may have only limited effects. The challenge is therefore not simply to intervene, but to identify those circumstances, conditions, and constraints that exert the greatest influence on the behaviour of the system.

From this perspective, effective intervention is concerned primarily with identifying and modifying constraints that regulate significant flows within the wider causal network. These flows may involve matter, energy, information, resources, authority, decisions, or patterns of social interaction. Constraints that regulate such flows often exert disproportionate influence on system behaviour because changes to them can affect many downstream processes simultaneously. The search for suitable interventions is therefore fundamentally a search for constraints that govern significant flows within the wider network and the identification of suitable leverage points.

The existence of leverage does not imply that simple solutions always exist. Social systems are complex, and interventions often produce unintended consequences. A constraint that appears highly influential from one perspective may prove less important when viewed within the wider system. For this reason, leverage should be understood not as a guarantee of success but as a hypothesis to be investigated through careful analysis.

The concept of leverage reinforces an important theme running throughout this work. Effective intervention depends not only on the willingness to act but also on understanding the constraint structures that generate behaviour. The search for leverage is therefore inseparable from the process of diagnosis. Before deciding how to

intervene, it is first necessary to understand which constraints are shaping the behaviour of the system and how those constraints interact.

The detailed identification and evaluation of leverage points forms an important part of intervention design and will be examined in later papers. For the present discussion, it is sufficient to recognise that interventions differ greatly in their potential effects and that understanding causal networks and constraint structures provides a basis for identifying more influential opportunities for change (Meadows, 1999).

4. Constraints on Intervention

4.1 Interveners Are Part of the System

Discussions of intervention often assume an external observer capable of analysing a system and deciding how it should be changed. In practice, however, intervening agents are rarely external to the systems they seek to influence. Individuals, organisations, governments, and institutions are themselves components of wider social systems and are therefore subject to many of the same constraints that shape the behaviour of others.

Intervening agents possess needs, interests, beliefs, values, incentives, and limitations. Their understanding of a situation is shaped by the information available to them, the perspectives they adopt, and the social environments within which they operate. Consequently, interventions are never designed from a position of complete knowledge or perfect neutrality. The interpretation of a problem, the selection of objectives, and the choice of intervention strategies are all influenced by the characteristics of the intervening agents themselves.

This observation has important implications for the analysis of social change. If interveners are part of the system, then their actions cannot be understood independently of the wider social processes in which they are embedded. Governments are influenced by political incentives, organisations by institutional pressures, businesses by economic considerations, and individuals by personal motivations and social expectations. The behaviour of intervening agents therefore requires explanation in the same way as the behaviour of any other component of a social system.

For example, a government may introduce a policy intended to improve economic performance, while simultaneously being influenced by electoral pressures, lobbying activities, ideological commitments, and administrative constraints. Similarly, organisational leaders attempting to improve performance may be constrained by limited information, existing power structures, resource limitations, or established organisational cultures. Interventions therefore reflect not only the characteristics of the target system but also the constraints acting upon those who design and implement them.

Recognising that interveners are part of the system introduces a reflexive dimension into intervention analysis. The question is no longer simply whether a proposed intervention is likely to succeed, but also how the assumptions, incentives, capabilities, and limitations of the interveners influence the intervention process itself. Effective intervention therefore requires attention not only to the constraints generating the problem but also to the constraints shaping the agents attempting to address it.

This perspective represents an important departure from many conventional approaches to social intervention. Rather than treating intervention as the application of external expertise to a passive system, it views intervention as an interaction between multiple components within an evolving social process. Interveners are themselves actors within the morphogenetic cycle, shaped by the same dynamics of structure, culture, agency, and constraint that influence the systems they seek to change (Archer, 2003).

4.2 Why Intervention Requires Constraints

If interveners were perfectly informed, entirely objective, and free from personal or institutional interests, there might be little need to regulate the intervention process itself. In reality, however, intervening agents are subject to the same kinds of limitations and constraints that affect all components of social systems. Their decisions are shaped by incomplete information, bounded rationality, competing incentives, organisational pressures, and imperfect understanding of the systems they seek to influence (Simon, 1957).

This creates an important challenge. Interventions have the potential to improve system viability, but they also have the potential to reduce it. A policy intended to solve one problem may create new difficulties elsewhere. An intervention that benefits one group may impose costs on another. A decision that appears effective in the short term may undermine long-term adaptability or resilience. Consequently, intervention cannot be evaluated solely in terms of intentions. It must also be evaluated in terms of its likely effects on the systems involved.

The need for constraints on intervention follows directly from this observation. Just as social behaviour is shaped by constraints, so too is the intervention process itself. Constraints on intervention help regulate how problems are defined, how evidence is evaluated, how decisions are made, and how outcomes are assessed. Their purpose is not to prevent intervention, but to increase the likelihood that interventions contribute positively to system viability.

Many familiar governance mechanisms can be understood in this way. Scientific review seeks to constrain error and unsupported claims. Legal frameworks constrain the exercise of power. Professional standards constrain unsafe or unethical practice. Democratic processes constrain political authority. Organisational procedures

constrain decision-making within institutions. Although differing in form, all of these mechanisms attempt to regulate the behaviour of intervening agents by shaping the conditions under which decisions are made.

From a systems perspective, intervention therefore becomes a special case of constraint regulation. The target system is regulated through intervention, while the intervention process is regulated through governance. This introduces a second-order level of analysis in which attention shifts from the behaviour of the system being changed to the behaviour of those attempting to change it.

Importantly, constraints on intervention should not be viewed merely as restrictions. Effective constraints can enhance as well as limit action. Scientific methods improve the reliability of knowledge. Professional standards increase trust and competence. Clear governance structures improve coordination and accountability. In this sense, constraints on intervention perform the same enabling and regulating functions discussed elsewhere in this work. They increase the likelihood that interventions are informed, coherent, and responsive to feedback.

Recognising the need for constraints on intervention raises a further question. If interventions require governance, who governs the intervention process itself? Addressing this question leads naturally to the concepts of governance and meta-governance examined in the following sections.

4.3 Sources of Intervention Failure

Interventions frequently fail to achieve their intended objectives. In some cases, they produce little effect. In others, they generate unintended consequences that leave the system in a less viable state than before. Understanding the sources of intervention failure is therefore as important as understanding the interventions themselves.

One common source of failure is incomplete or inaccurate information. Intervening agents must make decisions based on their understanding of the system, yet social systems are often complex and only partially observable. Important relationships may be overlooked, causal mechanisms misunderstood, or significant constraints ignored. As a result, interventions may be directed at symptoms rather than the conditions generating them.

A second source of failure arises from epistemic constraints (Simon, 1957). Individuals and organisations interpret information through existing beliefs, assumptions, theories, and cultural frameworks. These may simplify understanding and support decision-making, but they can also distort perceptions of reality. Ideological commitments, disciplinary boundaries, organisational cultures, and established narratives may all influence how problems are defined and which interventions are considered appropriate.

Interventions may also fail because of incentive structures. Agents do not necessarily pursue the long-term viability of the systems they affect. Political actors may prioritise electoral success, organisations may prioritise short-term performance, and individuals may pursue personal interests that conflict with wider system needs. Under such conditions, interventions may be selected because they benefit particular actors rather than because they improve overall system viability.

Power asymmetries can create further difficulties. Those with the greatest capacity to intervene may not possess the most accurate understanding of a situation, while those with valuable knowledge may lack the authority to influence decisions. Information may be filtered as it moves through organisational hierarchies, dissenting perspectives may be suppressed, and feedback may become distorted. Consequently, intervention decisions may be based on incomplete or misleading representations of system conditions.

Even when interventions are well informed and well intentioned, unintended consequences remain a persistent challenge. Social systems contain numerous interacting constraints and feedback processes, many of which may not be fully understood. Altering one part of the system may therefore generate effects elsewhere that were neither anticipated nor desired. The greater the complexity of the system, the greater the potential for such outcomes.

These various sources of failure share a common feature. They arise not only from the characteristics of the target system but also from the constraints acting upon the intervention process itself. Effective intervention therefore requires attention to both. Understanding the problem is necessary, but it is equally important to understand the limitations, incentives, and constraints shaping those who seek to address it.

The recognition that interventions are vulnerable to systematic forms of failure provides a strong rationale for governance. If intervention is to contribute positively to system viability, mechanisms are required to regulate decision-making, challenge assumptions, incorporate feedback, and constrain the misuse of power. Governance can therefore be understood as an attempt to reduce the likelihood of intervention failure while improving the quality of collective decision-making.

5. Governance and Meta-Governance

5.1 Governance as Constraint Regulation

The discussion so far has argued that social behaviour emerges from interacting constraints and that interventions operate by modifying those constraints. It has also argued that interventions themselves are subject to limitations, incentives, and sources of failure. These observations raise an important question: how are interventions

regulated, and how can their effectiveness be improved? The answer lies in the concept of governance.

Governance is often associated with governments, organisations, or formal systems of administration (Ostrom, 1990; Beer, 1972). From a systems perspective, however, governance can be understood more generally as the regulation of constraints affecting collective behaviour. Its purpose is to influence how individuals, groups, and organisations interact by shaping the conditions under which decisions are made and actions occur.

Viewed in this way, governance is itself a form of intervention. Laws, regulations, organisational structures, professional standards, cultural norms, and decision-making procedures all influence behaviour by modifying the constraints under which agents operate. Rather than directly determining behaviour, governance alters the conditions that shape behaviour, thereby influencing the trajectories that social systems are likely to follow.

Effective governance therefore depends upon identifying which constraints regulate the most significant flows within the systems being governed and directing attention towards those constraints most capable of influencing overall system behaviour and viability.

This understanding is consistent with the broader framework developed throughout this work. Just as interventions modify constraints in order to influence outcomes, governance modifies constraints in order to influence interventions and collective behaviour. Governance can therefore be understood as a higher-order process of constraint regulation operating within social systems.

For example, traffic regulations do not physically control the movement of vehicles. Instead, they establish a set of constraints that influence how drivers behave. Similarly, organisational procedures do not directly perform the tasks of an organisation but regulate how decisions are made, information is shared, and resources are allocated. In each case, governance operates by shaping the constraint landscape within which behaviour emerges.

This perspective highlights an important relationship between governance and viability. The purpose of governance is not simply to impose restrictions but to regulate constraints in ways that support the continued functioning, adaptation, and coordination of the system. Effective governance therefore seeks to shape constraint structures so that collective behaviour contributes positively to system viability.

An important component of governance is trust (Fukuyama, 1995) . Governance systems depend not only upon formal authority but also upon the willingness of individuals and organisations to cooperate, comply with decisions, and provide reliable

information. Trust and legitimacy therefore function as important constraints affecting governance effectiveness. High levels of trust can facilitate communication, coordination, and collective action, while declining trust may reduce cooperation, distort feedback, and undermine the capacity of governance systems to support viability. The maintenance of trust may therefore be viewed as an important aspect of effective governance.

Understanding governance as constraint regulation also helps explain why governance itself becomes an object of analysis. If governance operates through constraints, then governance systems are themselves subject to constraints, sources of failure, and opportunities for intervention. The regulation of behaviour therefore leads naturally to the regulation of governance itself, introducing a hierarchy of governance processes that will be examined in the following section.

5.2 Governance of Intervention

If governance is understood as the regulation of constraints affecting collective behaviour, then it follows that governance itself may become the object of governance. Whenever a system is established to regulate behaviour, questions arise concerning how that regulatory system operates, how it is constrained, and how its effectiveness can be maintained. This introduces a hierarchy of governance processes within social systems.

At the first level, intervention is directed towards the social system itself. Agents identify perceived problems or opportunities and seek to modify constraints in ways expected to influence behaviour and outcomes. Examples include introducing new laws, redesigning organisational structures, investing in infrastructure, or implementing educational programmes. The focus at this level is the regulation of constraints affecting the target system.

At the second level, attention shifts from the target system to the intervention process itself. The question is no longer simply whether an intervention will influence behaviour, but whether it has been appropriately designed, evaluated, and implemented. Governance at this level regulates the procedures through which interventions are developed and applied. Examples include policy appraisal processes, scientific and technical review, stakeholder consultation, professional standards, and organisational decision-making procedures. Their purpose is to improve the quality of intervention decisions and reduce the likelihood of error.

At the third level, governance itself becomes the object of analysis. Governance systems may become ineffective, unresponsive, distorted, or captured by particular interests. Societies therefore often develop higher-order constraints intended to regulate governance processes themselves. Constitutional arrangements, judicial independence, separation of powers, democratic accountability, ethical principles,

institutional checks and balances, and the maintenance of public trust can all be understood in this way. Their purpose is not to govern society directly, but to influence how governance is conducted and to maintain the legitimacy, effectiveness, and adaptability of governance systems.

Viewed from a systems perspective, each level regulates the constraints operating at the level below. Intervention regulates the target system. Governance regulates intervention. Meta-governance regulates governance. The hierarchy therefore reflects a sequence of increasingly reflexive processes in which systems become concerned not only with behaviour, but with the regulation of behaviour, and ultimately with the regulation of regulation itself.

A practical example can be found in public policy. A government may introduce environmental regulations intended to reduce pollution. These regulations represent an intervention in the behaviour of individuals and organisations. The process through which the regulations are developed may itself be governed by legal procedures, public consultation, and scientific review. Those governance mechanisms may in turn be constrained by constitutional principles, judicial oversight, and broader societal commitments regarding rights, accountability, and legitimacy. What appears initially as a single intervention is therefore embedded within a hierarchy of governance processes.

This hierarchy highlights the increasing reflexivity of human social systems. Unlike many natural systems, human societies possess the capacity not only to modify behaviour but also to reflect upon and modify the mechanisms through which behaviour is regulated. Understanding intervention therefore requires attention not only to the target system but also to the governance structures that shape how interventions are conceived, selected, and implemented.

Governance systems are themselves social systems and are therefore subject to the same morphogenetic processes as the systems they govern. Governance structures, cultural assumptions, institutional arrangements, and patterns of authority may all evolve through time in response to changing conditions. The governance hierarchy should therefore be understood not as a fixed structure but as part of the wider morphogenetic cycle through which societies adapt, stabilise, and change.

5.3 The Practical Limits of Recursion

The hierarchy of governance described in the previous section naturally raises an important question: who governs the governors? If intervention requires governance, and governance requires meta-governance, does this process continue indefinitely? At first sight, the logic appears to lead towards an infinite regress in which every system of regulation requires another system to regulate it.

In practice, however, social systems do not operate in this manner. At any point in time, interventions occur within a set of higher-order constraints that are provisionally accepted as legitimate, appropriate, or necessary. These constraints provide a framework within which governance operates and against which interventions are evaluated. Although such frameworks may themselves be modified over time, they serve as temporary stopping points within the governance hierarchy.

Examples include constitutional arrangements, legal systems, scientific methods, professional standards, ethical principles, and cultural norms. These systems do not eliminate the possibility of further governance, but they establish relatively stable conditions under which governance can occur. In effect, they provide the background constraints against which decisions, interventions, and governance processes are judged (Ostrom, 1990).

This observation suggests that governance hierarchies are better understood as practical rather than absolute structures. The question is not whether an ultimate governor exists, but whether the current governance arrangements are sufficient to regulate the systems operating beneath them. When governance failures occur, attention may shift upwards within the hierarchy. Problems initially attributed to individual behaviour may be traced to deficiencies in intervention design. Failures in intervention may reveal weaknesses in governance processes. Governance failures may in turn expose shortcomings in constitutional, ethical, or epistemic frameworks. As understanding develops, the focus of intervention may move progressively to higher levels of the governance hierarchy.

The hierarchy therefore does not represent an infinite chain extending without limit. Instead, it reflects the capacity of human societies to engage in increasingly reflexive forms of self-regulation. Systems become capable not only of regulating behaviour, but also of regulating the mechanisms through which behaviour is regulated. The process continues only so far as is necessary to address perceived deficiencies within the existing governance structure.

An important implication follows from this perspective. Effective intervention is not always directed at the immediate problem. In some cases, the most influential constraints lie within the systems responsible for governing that problem. Efforts to improve educational outcomes, organisational performance, environmental protection, or public policy may therefore require interventions aimed at the governance structures themselves rather than the target systems they regulate. The identification of such higher-order constraints is one of the reasons why reflexive analysis plays an important role in understanding social change.

The governance hierarchy therefore provides a practical framework for analysing intervention within complex social systems. It highlights the fact that behaviour,

intervention, governance, and meta-governance are all embedded within evolving networks of constraints. Understanding where significant constraints reside within this hierarchy can help identify more effective opportunities for intervention while avoiding the assumption that every problem can be solved solely at the level where it first appears.

6. Viability as the Guiding Principle

6.1 The Need for an Evaluative Criterion

The previous sections have argued that interventions operate through the modification of constraints and that governance exists to regulate the intervention process. This raises an important question: how do we determine whether an intervention is successful? More specifically, what criteria should be used to evaluate alternative interventions and the outcomes they produce?

At first sight, the answer may appear straightforward. An intervention might be considered successful if it achieves its intended objective. A government may seek to reduce unemployment, an organisation may attempt to improve productivity, or a community may try to reduce crime. If the desired outcome is achieved, the intervention may seem successful.

However, immediate objectives do not always provide a reliable basis for evaluation. An intervention may achieve one goal while creating difficulties elsewhere. Policies that increase short-term economic growth may undermine long-term environmental sustainability. Measures that improve organisational efficiency may reduce adaptability or resilience. Efforts to reduce one social problem may unintentionally create another. The achievement of a specific objective therefore does not necessarily imply that the overall condition of the system has improved.

This challenge becomes particularly significant in complex social systems where interventions often produce effects across multiple domains and timescales. Outcomes that appear beneficial from one perspective may prove harmful from another. Similarly, interventions that generate short-term improvements may contribute to long-term instability. Judgements about success therefore require a broader perspective than the achievement of immediate goals alone.

A further difficulty arises because different agents may pursue different objectives. Individuals, organisations, governments, and social groups frequently possess competing interests and priorities. As a result, interventions that are regarded as successful by one group may be regarded as harmful by another. A more general evaluative principle is therefore required if interventions are to be assessed in a consistent and systematic manner.

The search for such a principle has a long history within philosophy, politics, economics, and systems theory. The approach adopted in this work is to evaluate interventions in relation to their effects on system viability (Beer, 1979)

. Rather than asking only whether a particular objective has been achieved, the question becomes whether the intervention contributes to the continued functioning, adaptation, and persistence of the systems involved. Before examining the implications of this principle, it is first necessary to clarify what is meant by viability.

6.2 Systemic Viability

The concept of viability occupies a central position within the framework developed throughout this work. In its simplest sense, viability refers to the capacity of a system to persist through time while continuing to perform the functions necessary for its existence. A viable system is one that remains capable of maintaining itself despite changing internal and external conditions.

Viability should not be confused with mere persistence. Some systems may continue to exist while experiencing declining performance, increasing fragility, or progressive loss of adaptive capacity. Nor should viability be equated solely with adaptation. Systems that change continuously without maintaining the structures and processes necessary for their continued operation may also cease to be viable. Viability therefore depends upon a balance between stability and adaptability.

Stability enables a system to maintain coherence, identity, and functional organisation over time. Adaptability enables it to respond to changing circumstances, recover from disturbances, and exploit new opportunities. Too little stability may result in disorder and fragmentation, while too little adaptability may lead to rigidity and eventual failure. Viable systems therefore occupy a dynamic position between these extremes, preserving sufficient continuity to maintain their existence while remaining capable of responding to change.

This relationship can be observed across many domains. A biological organism must maintain stable internal processes while adapting to changes in its environment. An organisation must preserve core functions while responding to new technologies, markets, and social conditions. Societies must maintain sufficient order and coordination to function while remaining capable of adapting to changing economic, cultural, and environmental circumstances. In each case, viability depends upon balancing persistence with adaptation.

Within the Enhanced Morphogenetic Cycle, viability may be understood as the capacity of a system to remain within a range of states compatible with its continued functioning. Processes of morphostasis contribute to stability and continuity, while

processes of morphogenesis support adaptation and change. Viability emerges from the ongoing interaction between these processes rather than from either in isolation.

The concept of viability provides a particularly useful basis for evaluating interventions because it directs attention towards the long-term condition of the system rather than towards isolated objectives or short-term outcomes. Instead of asking whether a particular intervention achieved an immediate goal, the question becomes whether it contributed to the system's capacity to persist, adapt, and function effectively over time. This broader perspective provides a foundation for assessing interventions within complex and evolving social systems.

6.3 Multi-Level Viability

The viability of a system cannot be considered in isolation from the wider systems of which it forms a part. Social systems are composed of interacting subsystems and are themselves embedded within larger social, economic, political, and ecological systems. As a result, interventions that affect one level of organisation frequently produce consequences at other levels. The evaluation of interventions therefore requires attention to viability across multiple scales.

At the most immediate level, interventions may be assessed in terms of their effects on the viability of the target system itself. For example, a business may seek to improve its long-term performance, a public institution may attempt to increase its effectiveness, or a community may try to strengthen social cohesion. In each case, intervention is directed towards enhancing the capacity of the system to persist, adapt, and function effectively over time.

However, the viability of a system also depends upon the viability of its constituent subsystems. Organisations depend upon the capabilities and wellbeing of their members. Societies depend upon the functioning of families, communities, institutions, and economic systems. Interventions that improve the performance of the larger system while undermining the viability of important components may ultimately prove self-defeating. The continued functioning of the whole is often dependent upon the continued functioning of its parts.

A similar principle applies to interacting systems. No social system exists independently of its environment. Organisations depend upon customers, suppliers, regulators, and wider social institutions. Nations depend upon international economic, political, and ecological systems. Human societies depend upon the broader environmental systems that support life and economic activity. Interventions that improve the viability of one system by degrading the viability of systems upon which it depends may generate problems that emerge only over longer timescales.

For example, an organisation may improve short-term profitability by reducing investment in employee development. While this may initially benefit the organisation, it may gradually reduce the capabilities upon which future performance depends. Similarly, a society may achieve economic growth by consuming environmental resources more rapidly than they can be replenished. Such strategies may appear successful in the short term while reducing the viability of the wider systems supporting future prosperity.

These observations suggest that viability should be viewed as a multi-level property emerging from the relationships between systems rather than as a characteristic of isolated entities. The viability of the whole depends upon the viability of its components, while the viability of components often depends upon the viability of the wider systems within which they operate. Effective intervention therefore requires attention to these interdependencies and the consequences they generate.

Recognising the multi-level nature of viability does not eliminate the possibility of conflict between different systems or levels of organisation. Interventions may benefit one system while imposing costs on another, and different stakeholders may prioritise different aspects of viability. Such tensions are an inevitable feature of complex social systems and will be explored in more detail in later discussions of systemic viability ethics. For the present, it is sufficient to recognise that the effects of intervention extend beyond the immediate target system and must be considered within the broader network of interacting systems of which it forms a part.

6.4 A Preliminary Viability Principle

The preceding discussion has argued that interventions should not be evaluated solely in terms of whether they achieve particular objectives. Because social systems are interconnected and operate across multiple levels, the consequences of intervention often extend far beyond their immediate targets. A broader evaluative principle is therefore required if interventions are to be assessed in a consistent and systematic manner.

Because resources for intervention are always limited, viability is often improved most effectively by identifying constraints that regulate significant flows within the wider causal network. Such constraints frequently provide the greatest opportunities for leverage and therefore the greatest potential for improving system viability.

The principle proposed in this work is that interventions should be evaluated according to their effects on system viability. More specifically, interventions should seek to improve the long-term viability of the systems they govern while taking account of the viability of constituent and interacting systems. This principle does not imply that all systems must benefit equally from every intervention, nor that conflicts between

different forms of viability can always be avoided. Rather, it provides a general direction against which alternative interventions may be compared and assessed.

From this perspective, the purpose of governance is to support viability through the regulation of constraints. Governance systems influence behaviour by shaping the conditions under which agents act, while interventions modify constraints in ways intended to improve system functioning and adaptability. The effectiveness of governance may therefore be judged not simply by its ability to achieve particular objectives, but by its contribution to the long-term viability of the systems it affects.

An important implication follows. If governance exists to support viability, then the scale of governance should be broadly commensurate with the scale of the systems whose viability it seeks to maintain. Governance arrangements that are well suited to local systems may be insufficient for addressing problems that emerge at regional, national, or global scales. Conversely, governance structures operating at large scales may be poorly adapted to local circumstances. Effective governance therefore depends not only on the quality of regulation but also on the alignment between governance structures and the systems they are intended to support.

This observation helps explain why many contemporary challenges prove difficult to address. Economic systems, information networks, environmental systems, and technological systems increasingly operate across national boundaries, while many governance arrangements remain organised at more local or national scales. The resulting mismatch may contribute to recurring patterns of instability, conflict, and ineffective intervention. Understanding such governance misalignments is therefore an important aspect of understanding social viability.

The viability principle should not be understood as a complete solution to every intervention problem. Complex social systems inevitably involve competing interests, conflicting objectives, and difficult trade-offs. Nevertheless, viability provides a useful guiding principle because it directs attention towards the long-term capacity of systems to persist, adapt, and function effectively within their wider environments. In this sense, viability serves not as a fixed rule for decision-making but as a compass for navigating the complexities of social intervention and governance.

The ethical and practical challenges associated with applying the viability principle will be explored in later papers. For the purposes of the present discussion, it is sufficient to recognise that interventions, governance, and meta-governance can all be viewed as processes intended to influence the viability of interacting systems across multiple levels of organisation.

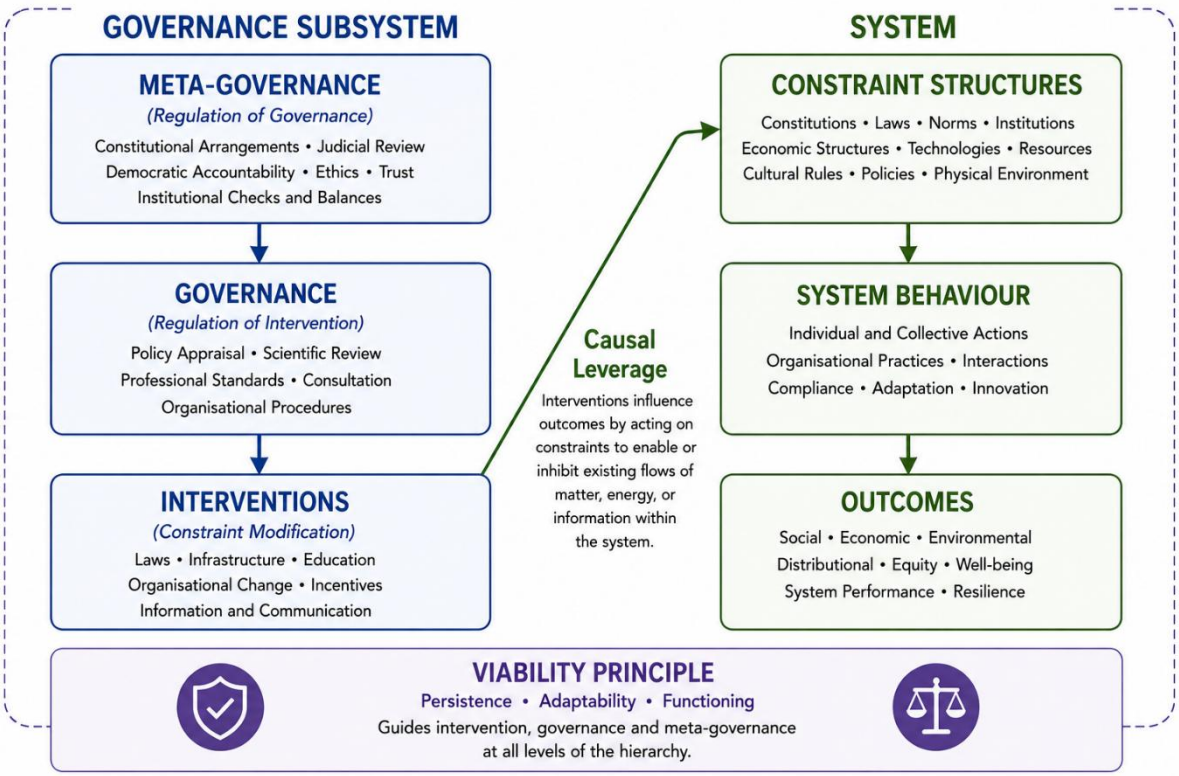

Figure 1. Viability, Governance and Intervention in Summary.
Interventions seek desired outcomes but influence them indirectly through causal leverage on constraint structures. Constraints shape behaviour, which in turn produces outcomes. Governance regulates intervention, while meta-governance regulates governance. The viability principle provides an overarching criterion for evaluating decisions and actions at all levels of the hierarchy.
Adapted from concepts developed in Challoner (2026a, 2026b, 2026c).

7. Implications for Social Change

7.1 Social Systems Are Understandable

One implication of the framework developed throughout this work is that social systems are more understandable than they often appear. Although social life is complex and constantly changing, this complexity does not imply randomness or complete unpredictability. Recurring patterns of stability, instability, adaptation, and change can be observed across many different social contexts. The existence of such patterns suggests that social systems possess underlying structures and processes that are amenable to analysis.

The preceding papers argued that many social outcomes emerge from the interaction of constraints operating across multiple levels of organisation. Economic disruption, political conflict, organisational failure, social fragmentation, and environmental degradation may appear unrelated on the surface, yet often exhibit similar underlying patterns of constraint interaction and misalignment. Recognising these recurring

patterns provides a basis for moving beyond the description of isolated events towards a more systematic understanding of social dynamics.

This perspective also challenges the view that social problems are simply the result of individual actions or isolated decisions. While individual behaviour remains important, it is shaped by broader networks of external, structural, cultural, and agentic constraints. Understanding social outcomes therefore requires attention not only to what people do, but also to the conditions under which they act. Constraint analysis provides one means of identifying and investigating these conditions.

The existence of recurring patterns does not imply that social systems can be predicted with complete accuracy. Social systems are open, adaptive, and influenced by many interacting processes. Nevertheless, explanation does not require perfect prediction. The ability to identify significant constraints, understand causal relationships, and recognise sources of instability can provide valuable insights into why systems behave as they do.

The practical significance of this observation is considerable. If instability has causes, those causes can be investigated. If patterns of behaviour emerge from identifiable constraint structures, those structures can be analysed. Social systems may never be fully knowable, but neither are they beyond understanding. The possibility of informed intervention begins with the recognition that social behaviour is shaped by processes that can be studied, explained, and, at least in part, understood.

7.2 Social Systems Are Influenceable

If social systems are shaped by constraints, then changes to those constraints have the potential to influence social behaviour and outcomes. This does not imply that social systems can be controlled with precision or that interventions will always succeed. Nevertheless, it does suggest that deliberate changes to the conditions under which individuals, groups, and organisations operate can alter the trajectories that social systems follow through time.

Throughout this paper, intervention has been described as a process of constraint modification. Laws alter institutional constraints. Infrastructure alters physical constraints. Educational initiatives alter epistemic constraints. Organisational reforms alter structural constraints. Cultural movements alter normative constraints. In each case, intervention influences behaviour not by directly determining what agents do, but by changing the conditions within which decisions and actions occur.

Examples of successful interventions can be found throughout history. Public health improvements have been achieved through changes to sanitation systems, medical practices, and public information. Economic development has often been supported through infrastructure, education, and institutional reform. Organisations regularly

improve performance through changes to structures, communication systems, and decision-making processes. Although outcomes are never guaranteed, such examples demonstrate that deliberate changes to constraint structures can influence social behaviour in significant and lasting ways.

The concept of leverage further strengthens this conclusion. Some constraints regulate large flows of matter, energy, or information within a system and therefore exert disproportionate influence on behaviour. Interventions directed at such constraints may produce effects that extend far beyond the immediate point of intervention. The identification of these leverage points provides opportunities for achieving meaningful change without requiring control over every aspect of the system.

At the same time, influence should not be confused with control. Social systems are open systems containing many interacting agents, each possessing their own goals, interpretations, and capacities for action. Consequently, interventions often produce outcomes that differ from those originally intended. Effective intervention therefore requires an appreciation of uncertainty, feedback, adaptation, and unintended consequences.

The practical implication is that social change should be approached neither with excessive confidence nor with resignation. The complexity of social systems does not eliminate the possibility of influence, but it does require humility regarding what can be achieved. The most effective interventions are often those that combine informed analysis with continual learning, adaptation, and responsiveness to feedback.

Recognising that social systems are influenceable provides an important source of practical optimism. While many social problems are difficult and deeply embedded, they are not necessarily immutable. Understanding the constraints that shape behaviour creates opportunities for informed action, experimentation, and improvement. The challenge is not whether social systems can be influenced, but how such influence can be exercised responsibly and effectively.

7.3 Intervention Requires Reflexivity

The preceding discussion has argued that social systems are both understandable and influenceable. However, it does not follow that effective intervention is straightforward. The same factors that make social systems capable of adaptation and change also make them difficult to govern. Interventions occur within complex environments characterised by uncertainty, incomplete information, competing interests, and evolving conditions. As a result, successful intervention requires more than the identification of problems and the implementation of solutions.

A central theme of this paper has been that intervening agents are themselves part of the systems they seek to influence. Their decisions are shaped by beliefs, incentives,

values, institutional arrangements, and limitations in knowledge. Consequently, intervention cannot be understood simply as the application of external expertise to a passive system. The intervention process itself becomes an object of analysis, requiring attention to the constraints acting upon those who design, implement, and evaluate interventions.

This recognition introduces the need for reflexivity. Reflexivity involves the capacity to reflect not only upon the system being studied but also upon the assumptions, objectives, methods, and constraints shaping the intervention process itself. It requires intervening agents to question how problems are defined, how evidence is interpreted, how decisions are made, and how success is evaluated. Reflexivity therefore extends the focus of analysis from the behaviour of social systems to the behaviour of those attempting to influence them.

The importance of reflexivity becomes particularly apparent when interventions fail. Such failures may arise from incorrect assumptions, incomplete information, distorted incentives, power asymmetries, or unanticipated consequences. In many cases, the problem lies not solely within the target system but within the intervention process itself. Effective intervention therefore requires mechanisms that support critical reflection, feedback, learning, and adaptation.

Governance plays an important role in this process. Scientific review, professional standards, democratic accountability, legal oversight, and organisational procedures can all be understood as mechanisms that encourage reflexivity by constraining the intervention process and exposing it to scrutiny. Their purpose is not merely to restrict action but to improve the quality of decision-making and reduce the likelihood of systematic error.

The need for reflexivity also reinforces the importance of adaptation. Because social systems are open and evolving, interventions cannot be expected to perform exactly as intended under all circumstances. New information becomes available, conditions change, and unintended consequences emerge. Effective intervention therefore requires ongoing monitoring, evaluation, and adjustment rather than the assumption that a single intervention will permanently solve a problem.

The practical lesson is one of informed humility. Social systems can be understood, influenced, and improved, but they cannot be fully controlled. The objective of intervention is therefore not to impose predetermined outcomes upon complex systems, but to influence their trajectories in ways that support long-term viability while remaining responsive to feedback and changing conditions. Reflexivity provides the means through which this ongoing process of learning and adaptation can occur.

Viewed in this way, intervention becomes not a one-time act of problem solving but a continuous process of observation, learning, adjustment, and governance. The capacity

for such reflexive intervention may be one of the most important features distinguishing human social systems from many other forms of complex adaptive system.

8. Relationship to Later Papers

The purpose of the present paper has been to establish the general principles linking intervention, governance, and viability within social systems. In doing so, it has introduced intervention as a process of constraint modification, governance as the regulation of constraints affecting collective behaviour, and viability as a guiding principle for evaluating interventions and governance arrangements. These concepts provide a foundation for several later developments within this programme.

Future papers will examine the causal mechanisms through which interventions operate within the Enhanced Morphogenetic Cycle. Particular attention will be given to the identification of leverage points, the design of intervention strategies, the role of agency and power, and the ways in which interventions modify constraint structures to influence social outcomes. The aim will be to develop a more detailed understanding of how intervention processes function within complex and evolving social systems.

Other papers will explore the ethical and practical challenges associated with the viability principle. While the present paper has proposed viability as a general evaluative criterion, important questions remain regarding conflicts between different forms of viability, competing stakeholder interests, trade-offs between stability and adaptability, and tensions between local and wider system needs. These issues require more detailed consideration than is possible within the scope of the present discussion.

Additional work will also examine related topics including organisational agency, governance systems, power, epistemic constraints, institutional pathologies, and the challenges associated with coordinating interventions across increasingly interconnected social systems. Together, these developments seek to extend the framework presented here into a more comprehensive theory of social understanding, intervention, and governance.

The central message remains unchanged. Social systems are shaped by constraints, interventions influence outcomes through the modification of constraints, governance regulates the intervention process, and viability provides a guiding principle for evaluating the consequences of social change. Future papers build upon these foundations by exploring their implications in greater theoretical and practical detail.

9. Conclusion

This paper has argued that intervention is a natural extension of the processes through which social systems adapt, stabilise, and change. Building upon the Constraint Analysis Framework and the Enhanced Morphogenetic Cycle, it has examined the

relationships between intervention, governance, and viability and has proposed a systems-based perspective on how social change may be understood and influenced.

Three central propositions have emerged from the discussion. First, social instability often reflects patterns of constraint misalignment. Social problems do not arise randomly but emerge from interactions between external, structural, cultural, and agentic constraints operating across multiple levels of organisation. Understanding instability therefore requires attention to the conditions that shape behaviour and the relationships between those conditions.

Second, intervention operates through the modification of constraints, particularly those constraints that regulate significant flows within the wider causal network. Effective intervention therefore depends upon understanding how matter, energy, information, resources, authority, and influence move through social systems and identifying the interventions that enable or inhibit those flows.

Third, effective intervention requires governance and should be guided by systemic viability. Because intervening agents are themselves part of the systems they seek to influence, intervention is subject to limitations, incentives, and sources of failure. Governance provides mechanisms for regulating the intervention process, while viability offers a general principle for evaluating interventions and their consequences across multiple levels of organisation.

A further implication follows from these propositions. Social systems are neither wholly predictable nor beyond understanding. Recurring patterns exist, instability has causes, and those causes can be analysed. Equally, social systems are neither fully controllable nor immune to influence. Constraints can be modified, outcomes can sometimes be improved, and opportunities for meaningful intervention can be identified. The challenge is not whether social systems can be influenced, but how such influence can be exercised responsibly, effectively, and in ways that support long-term viability.

This challenge points towards the importance of reflexivity. Interventions must remain open to learning, feedback, adaptation, and critical review. Understanding social systems requires not only the analysis of behaviour and institutions but also the examination of the assumptions, governance structures, and intervention processes through which social change is pursued. Effective intervention therefore becomes a continuing process of observation, learning, adjustment, and governance rather than a search for fixed solutions.

The overall message of this paper is one of pragmatic optimism. Social systems are complex, but they are not incomprehensible. Social problems are difficult, but they are not necessarily immutable. By understanding the constraints that shape behaviour, identifying opportunities for intervention, and evaluating outcomes in relation to

systemic viability, it becomes possible to approach social change in a more informed, adaptive, and constructive manner.

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Definitions

D3.28 Intervention

Intervention is the deliberate modification of one or more constraints with the intention of influencing the future behaviour or outcomes of a system.

D3.29 Governance

Governance is the regulation of constraints affecting collective behaviour within a system.

D3.30 Meta-Governance

Meta-governance is the regulation of the constraints affecting governance processes.

D3.31 Viability Principle

The viability principle is the evaluative principle according to which interventions are assessed in terms of their effects on the long-term viability of the systems they affect and the wider systems with which those systems interact.

Propositions

P3.48 Constraint Modification Proposition

Interventions influence system behaviour primarily through the modification of constraints.

P3.49 Governance Proposition

Governance operates through the regulation of constraints affecting collective behaviour.

P3.50 Governance Function Proposition

The primary function of governance is to regulate constraints in ways that support the viability of the systems it governs and the wider systems with which those systems interact.

P3.51 Reflexive Intervention Proposition

Because intervening agents are themselves components of social systems, effective intervention requires reflexive consideration of the constraints acting upon the intervention process.

P3.52 Multi-Level Viability Proposition

The viability of a system depends not only upon its own persistence and adaptability but also upon the viability of constituent and interacting systems.

P3.53 Leverage Proposition

Relatively small interventions may produce disproportionately large effects when they modify constraints that regulate larger flows of matter, energy, or information within a causal network.