Don't Waste a Good Disaster: A Systems Approach to an Ethics of International Institutional Failures

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Abstract: This keynote paper provides a control systems perspective of failed internationalised institutional arrangements. In the past years we have experienced dramatic international systems failure across important institutions. Banks, religious institutions and governmental systems have all experienced catastrophic crises which have proven difficult to assess and address. This paper examines these failures as complex systems failures and highlights the role of socio-cultural systems in their failure. Firstly, the institutional arrangements are formally defined as complex systems. Secondly, the paper proposes the systemic failure as a failure of institutional culture which can be accounted for by certain systemic aspects of the cultural systems which underpin institutional life. The paper utilises a three layer model of culture to demonstrate systems effects in the institutional arrangements. The paper then presents empirical findings from a study of a large scale medical system implementation to demonstrate the role of cultural symbolic factors in the system implementation.

Keywords: Complex systems, developing countries, international stability, culture, ethics

1. INTRODUCTION

In the past years we have seen dramatic international systems failure across important institutions including banks, religious institutions and governmental systems. The continuing failure of national and international institutional systems is clear evidence that systemic problems are not being addressed at root and that, perhaps, these institutions are out of control.

Close examination of the institutional arrangements within which these problems arise strongly suggest that the very nature of the institutions as cultural systems contributes to the failures. Institutional systems are in out-of-control states but, due to some cultural dynamics, control

mechanisms within the institutional setting are repeatedly failing. This suggests that there is

1. a systemic failure

2. a systems control problem aspect to that failure

3. the control problem is not a management systems problem, but something deeper in the nature of the institution itself

Systems engineering can contribute to solving this problem by examining these failures as deep systems failures. The first section of the paper argues that complexity theory describes features of these institutions and sets out a working definition of complex systems

which might be applied to institutions. The paper then proceeds by demonstrating self-evident attributes of institutions that show that they are complex systems. This in turn means that institutions (and their crises) are an appropriate topic for systems engineering research. It then demonstrates from the literature that the systems we are dealing with are cultural systems and that these systems are underpinned by various sets of value patterns that act as a gestalt and operate at different layers within the cultural/institutional matrix. The paper then proposes that symbolic and values-driven aspects of these complex systems are primary drivers and can themselves be addressed using control systems. However, they are not straightforward linear control systems, but interdependent layered systems of holons each with its own set of dynamics but which must somehow each be aligned in order to create a viable, living social system replete with sophisticated feedback subsystems which measure levels of alignment between the holonic layers. This system is crucially dependent on successful alignment to be in a controlled, dynamically stable state. Without such alignment efforts at transparency, accountability and even reform are likely to fail because the heartbeat of the institution remains untouched. To date, the risks associated with multi-layer misalignment between cultural systems holons in the institutional arrangements as a systems control problem has received very little attention, and so the systemic failures are likely to continue.

2.   SYSTEMS PERSPECTIVE OF INSTITUTIONS

Institutions have received little attention from systems engineers, in spite of the catastrophic failures of the recent past. We might speculate that this is because institutions have not lent themselves to a traditional systems analysis which can help uncover their deep control mechanisms.

Firstly, we need to establish what kind of system institutions are, and if we can achieve this, then we can immediately make institutions a valid domain for control systems thinking. An excellent candidate theory for institutions is complexity theory. Complexity theory has been widely used within systems engineering, especially when thinking about socio-technical systems (e.g. Checkland (1999), Halpin & Stapleton (2003)). It is not possible to recount the entire field of complex systems in this short paper. However we can briefly review complex systems thinking and see if institutions fit with key features associated with system complexity. Definitions of complexity have varied in accordance to the variety of disciplines for which such systems are of interest. For Haggis (2008) system complexity refers to open, dynamic system holons, embedded within and partly constituting each other, whilst maintaining their own coherence. There is therefore a need to focus on the interactions between systems components, rather than looking at the complex system through the lens of static categories. Generally, complexity refers to an emergent property of systems that is composed of a number of self-organising agents that interact in a dynamic and non linear fashion and share a

common path (Jacucci and Hanseth (2006)). Goodwin (1994) suggested that it is unwise to try to reduce complex systems to more simple models. This so-called "reductionist" approach fails to explain complex features. So what are the features of complex systems that distinguish them from others kinds of systems? For Goodwin (1994) complex systems are distinguishable from other systems because they display several key properties:

1.   Holism (they are holonic i.e. significant information is lost when they are decomposed into subsystems)

2.   Emergent (their properties emerge as their behaviour unfolds suggesting processual approaches to their analysis)

3.   Rich interconnectivity (high levels of system interdependence)

4.   iterative (cyclic)

5.   non-linear/fluctuating (suggesting dynamic stability)

6.   chaordic: exist at the edge where order and chaos meet.

Multidimensionality: complex systems resist analysis in one dimension i.e. there is significant information loss if it is analysed from a single perspective

3.   INSTITUTIONS AS COMPLEX SYSTEMS

Institutional arrangements can be formally defined as complex systems, especially in terms of their cultural aspects. Let's take each complex property in turn. Cowan and Todorovic (2001) describe three layers of cultural values, espoused, hidden and deep, which comprise cultural realities within social groups and which operate semi-independently, but which are informed by each other. As each of these levels of analysis are hierarchically dependent but operate with their own sets of rules and dynamics, they each formally meet the definition "holon". Therefore institutions themselves formally can be described as comprising "holons" and therefore must be analysed holistically. Empirical studies of institutional development such as Kreiner (1979) clearly demonstrate how symbolic and values aspects of institutional systems are emergent, especially in their ideological aspects. They show how ideologies play out in institutions and also demonstrate the misalignments that can occur between ideologies and the values that operate in the praxis of the institution. Institutions are also socio-technical systems which, by definition are open systems with a matrix of interdependencies and interconnections which lend to the institution being both adaptable and, under certain circumstances, a learning system. As learning systems other authors have shown how these kinds of social structures comprise various learning cycles, including

double-loop (Argyris) and even out to quadruple loop learning (Hersh). Institutions are also dynamically stable. The work of Di Maggio and Powell (1983) has shown how institutions are isomorphic, tending to adapt to the institutional context within which they find themselves, adopting certain norms, socialisation tactics and customs by which they demonstrate their legitimacy to other institutions in the matrix of social interactions within they must function. This is a most important feature of institutions which creates some of the difficulties we will identify later in this paper, and which lead to misalignments in the culture and, ultimately, a drift towards toxic dysfunctionality. Managers in institutions have been variously described as operating at the "edge of chaos". The work of people like Niklas Luhman, Anders Born and others demonstrate this chaordic feature of organisational and institutional life. It feeds into the need for effective learning systems, and underlines the critical important of control and feedback mechanisms by which information from the chaotic space beyond the institutional boundary can be processed and incorporated into dynamically adapting subsystems and structures which maintain the overall stability in flux of the institutional system. Finally, the variety of disciplines interested in institutions, including social science, legal studies, anthropology, social psychology, systems engineering, management science is clear evidence of the multidimensional nature of institutional life.

Institutions have not attracted much attention from control systems engineering. Viewed as a complex system it is evident that control systems thinking can make important contributions to both our understanding of institutions and perhaps even provide a new perspective on how to address systemic problems in institutions. Systems engineering methods and notations, especially in the area of soft systems and human centred systems, can provide a new perspective on the problem of institutional failure. Figure 1 sets out in summary form the main components of our complex institutional system as three holonic layers. The layers have their own system dynamics but are connected and interdependent. We have already asserted that a complex system comprises self-organising agents that interact in a dynamic and non linear fashion and share a common pathway which implies some kind of integration and communications activities between the holons. This paper will argue that it is in the misalignment of important cultural holons that the system fractures and this in turn leads to dysfunction as the institutions attempts to maintain dynamic stability even as its coherence disintegrates. Tensions within the system, largely due to power-structures embedded within the matrix of social relations, contribute to this fracturing effect.

4.   INSTITUTIONS, VALUES AND CULTURE

Human social groupings need to be recognised and accepted in the eyes of broader society as legitimate and institutions fulfil this role (Selznick (1996)). Society will either be openly hostile to non-legitimate groups or ignore them because they do not recognise them. A school is legitimised as part of the educational infrastructure because it organises students into classes, places teachers in charge who have gone through a rigorous educational preparation (socialisation) process and fulfils other roles and includes various structures which demonstrate that it is a legitimate school. In return for conforming to social norms, society confers upon the school a budget (if it is a public school), certain licensing and other rewards which give the school legitimacy. If a group of people simply gather together in a local pub and say "we are a school" and then proceed to chat, it is unlikely that they will gain much legitimacy from the society in which they operate. Thus institutions are symbolic entities, imbued with a set of values which they must display as emblems of their legitimacy. They will simply have no social existence if they do not proceed in this way.

Institutions are comprised of their own internal culture which in turn is informed, amongst other things, by values which usually operate below the level of language. However, they must also show some deference to the values of the society within which they operate or they will lose legitimacy for both the individual members and the institution as a whole. According to Cowan and Todorovic (2001) the cultural values which inform these social arrangements operate at three levels:

1.   Espoused Values: this is the set of values which the institutions presents formally to itself and the environment and which comprise things like mission statements, core values stated on web sites etc.

2.   Hidden Values: sometimes called "the smell of the place" these are the values which are evident in the norms and customs which people adopt. They may be manifested in dress codes (casual or formal dress) and other social cues.

3.   Deep Values: Deep below the surface institutional cultures develop a gestalt pattern of interacting values which reflect the reality of organisational life as it is lived, and especially the ways in which power works in the institution. People are socialised into these values over time. In large institutions like religious Orders and Banks these values may be institutionalised through socialisation processed including education (seminaries for example) and hero figures. Socialisation and other tactics create subtle but very real pressure to conform to the unspoken norms and values of the organisation. From a systems perspective each of the above layers operates as a holon with its own set of rules and processes. However, level three should underpin level two, and level three and two should underpin level on. We can use a biological metaphor to explain the interaction between these holons. Firstly, we have the outward part of the body that we see, well groomed and cared for which is symbolic of the espoused values. Underneath the skin the various functional system operate which may belie the outward healthy looking body. The digestive, circulatory and hormonal systems all interact with each other but are also

somewhat independent, with their own set of dynamics determining their contribution to the whole. These are hidden from view but are important in that they provide the everyday functions and, from a control perspective, maintain functionality within certain limits (circulatory system maintains body temperature etc.). This hidden system is determined by the genetic encoding system which is the fundamental reference point for the entire organism. This is symbolic of the deep values referred to as "value memes" in order to reflect this cultural "genetics" by which cultures maintain themselves and align the entire social system as a coherent, bound together, unit of life. Memes comprising deep institutional culture encode behaviour and determine outcomes. They also inform emergency responses during crises when the deep nature of the culture as espoused values no longer provide the legitimising function for the social context. This leads to two questions:

1. What if the institutional values are out of synch with societies expectations, norms and values in respect of the institutional context within which it operates?

2. What if the three levels are not in alignment?

Let's look at this as a systems problem and see what this says about systemic institutional failure.
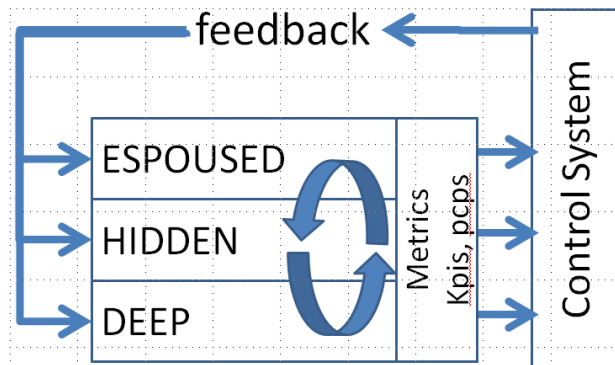

Figure 1. Institutional Cultural System With Control Subsystem

5. SYSTEMIC MISALIGNMENT IN INSTITUTIONAL CULTURAL SYSTEMS

Questions one and two above are pretty much two sides of the same question. The role of espoused values is to outwardly demonstrate to organisational members and to society at large that the organisation is legitimate. Its legitimacy stems from the fact that its cultural values (as espoused) reflect the kinds of value patterns that are expected and which will lend the institution legitimacy. Intuitively people expect that the layers of the value model are aligned, and that the pattern of aligned values is legitimate. But this may not be the case. The question then arises, which levels (if any) are aligned with societal expectations and which (if any) are aligned with each other?

Using this general cultural systems approach, based on three holonic layers of cultural values, we can begin to understand where control systems failure occurs and how systemic problems become so difficult to resolve.

Let's consider the internal institutional layers. Imagine that an institution espouses high values which align well with its social context. In reality the institution does not hold these values as deeply important at the deeper levels of its culture. A company espouses values about "caring for the environment" but, deep down, shareholder profits are valued higher and the company's employees intuitively know this (the message was communicated during socialisation and consolidated later in the priorities people assign various issues as they arise. When the espoused value of environmental care conflicts with the deeper value of shareholder profit, the latter being a more deeply valued, it is maintained at the expense of the more superficial environment values. However, the company must continue to espouse environment values if it is to retain its legitimacy (and avoid the regulators). The maintenance of perceived legitimacy supports the deeper value of shareholder value because shareholder, in order to maintain their legitimacy, can only invest in institutions which at least seem to be legitimate. This entire argument is very Kantian in that it asserts that rationality and morality are very similar things and alignment between rationality and morality must at least be seen to be in place. To act rationally means to be seen to act morally. In pursuit of espoused values our company establishes research institutes for environmental care, invests in environmentally sustainable projects and so on. In doing all this it will attract people into itself who care for the environment. However, over time, they too will come to understand they must conform to the deeper values about shareholders and profit. Existentially, these people will not own this, and will typically conform to the social setting (history teaches us that it takes great personal strength to do otherwise). This leads to deeply embedded bad faith (according to Sartre's definition) and dysfunctionality, even toxicity. Already, business ethics research is appearing which supports this contention (Boddy (2011)).

Let us imagine that the pollution continues for decades but is hidden from view through a set of institutional processes under the surface of the organisation. These hidden processes are needed to hide the misalignment between deep values (and their outcomes) and espoused values held out for the sake of institutional legitimacy. As systems engineers we can recognise a positive feedback mechanism which is motoring out of control, because feedback systems which sustain dynamic stability are systematically circumvented using informal system. This system can only become increasingly unhealthy and dysfunctional and this situation will increase as it seeks to maintain its legitimacy in the face of the society at large. Furthermore, important power interests will have invested considerably in the institution partly due to its seeming legitimacy. If they have invested a lot in gaining their status and power-reputation position they will exert great pressure to maintain and even feed the dysfunctional system. This

creates a positive feedback mechanisms which drives the institution further and further out of alignment. It also explains seeming irrational behaviour of banks and church bodies during the various scandals and crises that have made the headlines. The only destination for this institution is a crisis, and the crisis will happen at the level of values as it is exposed as illegitimate. This is dangerous because what tends to happen is a cognitive dissonance for institutional members. This in turn reflects a crisis of identity and humans are notoriously violent and scheming when they are threatened at the level of identity.

6. CONTROL ENGINEERING & INSTITUTIONAL DYSFUNCTION

The above thought-experiment can be applied to any institution and exposes where the problems lay and where the control mechanisms need to be placed. A management system operating at the espoused level will not address the heartbeat of the organisation, operating in the deep values which are inculcated under the surface of language. It shows why religious institutions covered up child abuse in order to sustain powerful elites. It also demonstrates how a bank could formally espouse "customer risk" as an important value whilst acting in a profligate way with that same risk profile when profit targets were under threat. Espoused, hidden and deep values are out of line i.e. not in control. The complex systems of the institution is fracturing into incoherent holons which are operating somewhat independently, tearing at the fabric of the social system. Systems engineering is one of the few disciplines that can identify the systemic nature of institutional failure. Control systems researchers have the intellectual and applications paraphernalia to address the problem (at least potentially). For example, a system of key performance indicators which exposes misalignment between operational realities of the institution and the espoused values of its leadership and displays this on a dashboard is a powerful way to focus upon alignment processes. If a company espouses core values like "the care of the environment" systems practitioners, informed by cultural systems analysis, can construct systems which measure KPIs and feed back the data into the institutional system.

How can we construct a cultural analysis toolkit? Candidate theories of culture now allow us to express in formal language value gestalts which were, until recently, very difficult to identify. Schwartz's Universal Values Model utilises a form of principle components analysis to configure value patterns within complex organisational and social settings. Whilst this work remains in its infancy, Carew & Stapleton (2014) and Martin (2012) show how such an approach can provide extremely powerful lenses by which to access deep value patterns.

Another excellent candidate is ontology engineering. Knowledge systems allow us to express logically complex forms of multidimensional knowledge which can be machine readable. This is the basis of the future semantic web and already extremely powerful ontologies have been deployed in medical informatics (e.g. UMLS) and library science (e.g. METS). Ontologies provide mechanisms by which to express complex knowledge about values and ethics in a machine readable form which can reflect the various interdependencies associated with complex systems. In order to address less codifiable knowledge ontologies should be coupled with storytelling approaches (such as those used in SCRUM methodologies, SSM and certain requirements engineering approaches).

7. SYNTHESIS

We are moving to a point where control systems engineering can provide real inroads into the problems of systemic institutional failure. We are dealing with a complex system and therefore, by definition, control systems engineering this will only be one of our tools for addressing these multidimensional system effects. However, control science has been overlooked as a powerful way to think about these issues and is ready to enter the fray. It is likely that the real problem of implementing such systems will not be technical, but axiological. Axiological models of human values (a substrate of institutional culture) have a gestalt quality and these kinds of features are not amenable to the discrete mathematical formalisms prevalent in control science. This will be a limitation of control systems models. However, models which deploy techniques like principle components analysis and factor analyses have attracted interest in this kind of work, and are good candidates for a formal model which is amenable to control theory as it applies to institutional systems. They too come laden with assumptions and limitations and good science will need to explicate these. Notwithstanding this, Carew & Stapleton (2014) and Schwartz (1992) have demonstrated the efficacy of these techniques in their models of human cultural value systems.

8. CONCLUSIONS

It can be argued that we provide only one holonic view amongst many. However, cultural dynamics are integral to institutional systems and, if we are correct, this provides the opportunity for a transformative, purposeful intervention in dysfunctional institutional systems. Our treatment of institutions as complex systems in this short paper is necessarily limited and even cursory. We have not considered very much emergent properties of institutions; we have skimmed over the rich connectedness of institutional members which complexity theory incorporates and we have not dealt very much with either diversity or adaptation in our system in these short pages. In spite of these limitations, this paper demonstrates the clear potential of the treatment of institutions as complex systems. This suggests interesting questions for control systems including:

1. Emergence: how can we model complex systems features in institutions using, for example agent-based systems to identify emergent features?

2. Diversity: How can we model the diversity of an institutional system and use this to determine, for example robustness of the system as it responds to environmental change?

3. Interdependence: What is the relationship between highly interconnected, interdependent systems components and phase transitions in the complex institutional system where behaviour becomes self-fulfilling and highly dysfunctional?

We can speculate that the answers to the above questions, as well as other important questions about the nature of complex institutional systems, lay in an understanding of underlying cultural dynamics. We propose that these dynamics can be expressed in terms of particular value configurations and patterns. As a result of recent developments, these patterns are themselves becoming amenable to a robust treatment using formal models.

Power elites will hardly be interested in systems and analyses which are likely to expose fragility in their own position, especially if this fragility is expressed in potential fracturing of the institutional system itself. We have seen this both in the Christian Church's responses to various scandals and in the Financial Sector's resistance to fundamental change. In other words, powerful interests may not want to shift from existing failing cultural systems because of the intrinsic shift in values this may imply. In such a shift power may need to be relinquished. It is a "catch 22". Foucault has already shown how power structures are so entrenched and embedded in the very fabric of international institutional life that sometimes it is only a massive crisis which can offer a possibility for deep change. In the financial sector the crisis of 2008-9 and its aftermath has offered a great opportunity to revalue what we do in our economic systems. Sadly, history teaches that the human species may waste just such a good disaster.

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