**WHEN RETREAT IS THE BEST DEFENCE: A SYSTEMS PERSPECTIVE ON A WORKFORCE PLANNING INITIATIVE**

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**ABSTRACT**

This paper illustrates through the use of case study, how a civilianisation programme in the defence sector led to unanticipated outcomes that threatened programme objectives. The illustration encompasses use of systems representations that facilitate development of insight about the systemic nature of change, and how change may be effectively managed.

**Keywords**: civilianisation, continuous improvement, change management, systems methods.

**INTRODUCTION**

This paper adds to a body of work that has sought to demonstrate the benefits of building understanding of systemic structure through the use of systems representational tools, and then how such systems representations are able to contribute to the generation of meaning (Lissack, 2004; Mabin et al., 2006). In particular, the paper seeks to provide insights of the systemic nature and effects of a *civilianisation* programme undertaken within a sovereign country defence force, and how such insights may contribute to a broader understanding of the nature of change.

Within the paper, the causal loop diagramming approach of qualitative systems dynamics is used to surface and represent the systemic nature and structure of behaviours and relationships embedded in the *civilianisation* process and then to surface behaviours, outcomes and consequences that emerge as the result of inter-connected and interacting causal loops and systems structures described by Senge et al. (1999) as systems archetypes.

The nature and focus of this case-based paper provides an illustration that case research can be a powerful research methodology in exploring matters relating to the management of change, project management etc.; and in developing creative insight and understanding, enriching theory or the development of new theory (Senge, 2006; Voss et al., 2002).

The *civilianisation* case (Cooke et al., 2012; Levy, 2012) (see below), provides some evidence of how well intended change may impact on organisations in unintended and unwanted ways - reflecting and highlighting a range of outcomes and emotions which include expectation, motivation, morale, fervour, resistance, disappointment, etc. Such findings are in keeping with the broader change management literature, spanning Lewin (1958), Kotter (1995, 1996) and others, for example, Kull et al. (2012), but will be reflected here via the development of systems perspectives (Mabin et al., 2006); Senge et al., 1999), and a belief that that much can be learned from recognising the systemic structure underpinning individual and organisational systems behaviours associated with the use of a variety managerial practices.

Many times, proponents of change will gain satisfaction and affirmation as initial milestones or objectives are achieved with ease, as expected, or as successes become visible. Then life may start to get difficult and pose problems; concerns will be raised as issues crop up elsewhere in the organisation; employee resentment at bearing the brunt and uncertainty of change will rise; employees will become alienated, demoralised and often look for a way out – perhaps, not wanting to be part of what is going on! Such comments and criticisms are not unusual, but the question remains of whether they should be considered as anecdote and as relating to unique events or whether attempts should be made to understand the systemic structure that gave rise to them, and with which managers have to contend.

The paper seeks to show how recognition and understanding of systemic structure may elevate anecdote to insight, and also convey how insight and meaning that may otherwise be overlooked or dismissed as anecdote or situational. In particular, it seeks to show how the recognition of embedded
common systems structures, systems archetypes, such as Senge’s Limits to Growth (LtG), Fixes that Fail (FtF) and Shifting the Burden (StB), may elevate understanding to a meta-level involving the interaction of systemic structures rather than the interaction of individual variables. As such, it is hoped that not only will those charged with the management of change may be able to share contemporary experiences and understanding, but that lessons can be gained from other similar change initiatives about the communality of issues and relationships that are surfaced.

The paper provides a demonstration of an approach that is redolent of Senge in its invocation of systems notions and systems representations (Senge et al., 1999; Senge, 2006). In particular, we use the causal loops diagrams (CLDs) of qualitative systems dynamics (SD) to capture and represent the impact and consequential effects of civilianisation initiatives undertaken within the Defence Force of a sovereign nation.

THE DEFENCE FORCE CIVILISATION CASE

The impact of the global financial crisis has been manifest in the New Zealand’s government’s renewed emphasis on financial and fiscal prudence, the reconsideration of portfolio funding priorities, budgetary restraint, budget cuts etc. Towards the end of the first decade of the millennium, defence capability and defence expenditure were once again subject to such consideration, and Government decided that Defence Force frontline capability should be enhanced, but within a capped Defence budget. In brief, the analysis undertaken suggested that, within the overall framework of the Defence Force’s 14,000 personnel, productivity gains and cost savings were possible, and that cost savings achieved by the civilianisation of administrative and other technical support functions (eg fire fighters, dental technicians, musicians and fitness trainers) could be used to enhance Defence Force frontline capability.

In summary, it was anticipated that budget and cost savings of $355m could be achieved by 2015. During 2010, immediate savings were achieved during a first phase of civilianisation, with the roles of 304 Defence Force staff being civilianised – of whom, 85 individuals were appointed to civilian positions with the remaining 219 leaving the Defence Force, as part of what has been referred to as forced civilianisation, forced attrition or redundancy. About $142m was saved during the financial year of 2011, allowing additional funds to be redirected to enhance Frontline capability, and thus providing some early justification for the Government’s beliefs and views about realigning and reprioritising budget expenditure, and, of course, its beliefs about the value of the Defence Force’s civilianisation process (Cooke et al., 2012; Levy, 2012).

However, by early 2012, vice-Chief of the Defence Force, Rear Admiral Jack Steer, was telling the Parliamentary Foreign Affairs and Defence Select Committee, that whilst forced attrition was accompanied by visible salary savings, it had also been accompanied by a record, higher than normal, 19% voluntary attrition rate, low morale and "change fatigue" which had other effects. He stated, in widely reported media coverage, that the Defence Force would not force any further staff to be civilianised (made redundant) because the process had been "too damaging", and that any further job cuts would be made through natural attrition or the completion of contracts. It was reported that that the high attrition rate (685 people left the service voluntarily in the six months between August 2011 and January 2012) had created shortfalls in … frontline … capability that had led the Defence Force to seek to recruit experienced military personnel from overseas. Another Defence spokesperson, Squadron Leader Kavie Tamariki said that the Defence Force was desperate to recruit highly skilled people with military experience to fill shortfalls in the army, navy and air force, stating, for example, that attrition meant that there were 39 positions from lieutenant to lieutenant-commander that just the Navy was looking to fill - "For us to grow someone like that it will take at least 15 years at a cost of $200,000 each to reach that position" – implying that given time pressures, it would be much easier to recruit than train from within the denuded force (Cooke et al., 2012). The importance of Defence Force staff capability was emphasised in Rear Admiral Steer’s comment "It is people that define our organisation, they are our greatest capability.” He also provided qualified reaffirmation of the productivity gains/cost savings strategy by stating that “overall personnel numbers would fall further before rising again as the Defence Force made savings which could be reinvested in people.”

For some, the civilianisation initiative represented Government belief that productivity gains were possible; that staff could be shed; that further cost savings could be made as Defence Force jobs were

civilianised to lower salary levels; and that such cost savings could then be redeployed to enhance Defence Force frontline capability. However, such beliefs may have separated those committed to the rhetoric from those who believed that it was “people that define our organisation, they are our greatest capability.”

Here, we suggest that whilst anticipated cost savings of the civilianisation process did provide an ability to reprioritise or reallocate funding to the frontline, and thus alleviate concerns about frontline capability, they were later accompanied by some unforeseen consequences. For example, whilst the drive towards civilianisation could be linked to cost savings, it also created uncertainty amongst Defence Force staff about their future, leading to, on the one hand, a drop in morale and, on the other hand, an increase in voluntary attrition that had immediate adverse effects on Defence Force capability - casting some doubt in the minds of those Defence Force leaders having to implement the civilianisation process. It may not be surprising then that Rear Admiral Steer chose to put a brake on Phase II of the civilianisation process, moving away from forced attrition to a process of natural attrition as a means of releasing funds that could then be redeployed elsewhere.

Indeed, the views of Rear Admiral Steer and Squadron Leader Tamariki suggest an implicit acceptance that productivity gains and enhanced capability need not necessarily be driven by cost-savings or cost-cutting initiatives alone, but should be complemented by alternative initiatives that include staff development and training, as well as recruitment.

However, any such alternatives would be implemented in a climate reflecting the unintended side-effects of the imposition of the initial civilianisation process, and that climate may be manifest of alienation, disaffection and lowering of morale that makes commitment of staff to the organisation or further organisational change, problematic. Indeed, whilst such climate may lead in some cases to attrition of disaffected staff, in other cases, problems may arise with disaffected staff who may not be able to take the option to leave.

In the following sub-sections, we demonstrate how different features and relationships implicit in the prior anecdotal narrative can be captured and represented by the causal loops diagrams (CLDs) of qualitative systems dynamics (Goh et al., 2012; Senge, 2006). In an initial CLD, we reflect the dynamic implicit when the non-problematic early gains from targeting the most obvious areas of redundant or low level work provide no indication of later difficulties, and note that this dynamic is redolent of the common systemic structure labelled by Senge (2006) as a Limits to Growth (LtG) systems archetype.

Then we attempt to reflect in a second CLD how the action chosen to create immediate benefit to a problem situation, may have an unintended consequence or side-effect of making the problem worse in the longer run. We note that this second CLD is redolent of Senge’s Fix that Fails (FtF) archetype. In a third sub-section, we show how the chosen action may well address the problem short term, but may also have a side-effect of undermining other alternative actions that could have lasting value – the common systemic structure of a Shifting the Burden (StB) archetype. In a final sub-section, we synthesise the three prior CLD representations into a composite CLD by identifying common variables and relationships and using them as basis for linking the three CLDs.

Civilisation Initiatives and Easy Pickings
Here, we suggest that the systems representation in Figure 1a reflects and confirms the often expressed intuition that change initiatives pursuing productivity gains or cost savings will, in an initial phase, often proceed and seemingly succeed with surprising ease and pace, at first, perhaps as the more obvious easy pickings are made (Loop R1).

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Figure 1a: The Growth Loop

Figure 1b: The Inhibitor Loops.
Then, in a second phase (See Figure 1b), the initiatives will lead to slower and/or limited improvements as additional gains and savings become more difficult to achieve when faced with emerging human, technological or cost constraints (Loop B1).

**Note:** The cause effect links in Figure 1a are denoted by arrows. An arrow with a ‘+S’ indicates that ‘if the cause increases, the effect increases above what it would otherwise have been’, that is, a change in the cause is positively associated with a Same direction change in the effect. So, if the cause decreases, the effect would decrease. That is, if commitment to civilianisation initiatives grows, then the level of forced attrition via civilianisation initiatives will also grow.

A negative arrow with a ‘−O’ indicates that ‘if the cause increases, the effect decreases below what it would otherwise have been’, that is, a change in the cause is associated with an Opposite direction change in the effect. So, if the cause decreases, the effect would increase. Parallel lines on an arrow indicates a delay or time lag between cause and effect.

As such, we recognise an initial dominance of loop R1, followed by the latter dominance of the B1 loop; and thus recognise the civilianisation initiative as evolving through implicit phases associated with the dynamic nature of dominant loops that share a common variable Cost Savings.

This variable thus becomes the link between two loops whose interaction is manifest as an evolution of changing loop dominance whose dynamics impact change associated with implementation of the civilianisation initiative. The extended CLD in Figure 1c is redolent of the Limits to Growth archetype (LtG) outlined by Senge (2006).

**Figure 1c: Defence Force Civilianisation CLD – reflecting the Limits to Growth archetype.**

In general, the LtG pattern recognises and reflects how seemingly initial success, may not be sustainable as opportunities for further attrition, or further cost-savings, diminish, or further cuts become too problematic. In such circumstances, we learn to recognise the need to manage the constraining factors (Loop B1), rather than focus effort on pushing the growth loop (R1). We also note the notion of how LtG resembles boom and bust; and how, mistakenly, the growth reinforcing loop may be taken for granted, especially when the possible constraining factors and balancing loops are not identified and managed! We also note the dangerous nature of reinforcing loops – how the virtuous growth loop can become a vicious spiral of decline, if the constraining factors and balancing loops are not identified in timely fashion, and managed effectively.

**Forced Attrition via Civilisation Initiatives and Side-Effects that Make the Problem Worse**

Here, we first surface the notion of the Fixes that Fail (FiF) archetype. Figure 2 provides a representation of this scenario where the intended fix to concerns about the organisation’s capability, in this case, the fix being implementation of cost-saving Civilisation initiatives, may well work in the short-term (Loop B11), but may be associated with unintended and unfortunate consequences and side-effects that undermine capability in the longer term (Loops R11 & R12), reflecting Senge’s FiF archetype. In illustration of how the CLD may be narrated and interpreted, we note, for Loop B11, growing concerns about frontline capability generate an increasing need to better resource frontline capability, a need to find cost savings to fund frontline capability developments which heightens commitment to civilianisation initiatives leading to higher levels of forced attrition and hopefully diminished concerns about frontline capability. We also recognise that the cost saving civilianisation initiatives may have the unintended consequence of worsening frontline capability concerns in the longer term, if fear or uncertainty about the future impacts adversely on morale, with increased numbers quitting the Defence Force, that is, voluntary attrition rises, subsequently reducing core frontline capability – Loop R11.
We note that Figures 1 and 2 also share common variables, in particular, the level of *forced attrition via civilianisation* and associated *cost savings*, which again provide the basis for dynamic interaction between the loops. Whereas the early dominance of Loop R1 gives way to the constraining Loop B1, in Figure 2, the early phase dominance of the problem fixing Loop B11 is replaced by the later dominance of Loop R11 that make the situational *concerns about frontline capability* worse in the longer term. The mutually dependent interplay of these loops, and an analysis of their evolving interaction, may be more easily noted and understood through the extended composite representation in Figure 3, and the Behaviour-over-Time (BoT) Charts in Figure 4 (Sterman, 2000).

**Figure 2: Defence Force Civilianisation - reflected as the *Fixes that Fail* archetype**

![Defence Force Civilianisation - reflected as the *Fixes that Fail* archetype](image1)

**Figure 3: Defence Force Civilianisation - reflected as *Limits to Growth* and *Fixes that Fail* archetypes**

![Defence Force Civilianisation - reflected as *Limits to Growth* and *Fixes that Fail* archetypes](image2)

**Figure 4: Defence Force Civilianisation – Illustrative Behaviour-over-Time (BoT) Charts**

![Defence Force Civilianisation – Illustrative Behaviour-over-Time (BoT) Charts](image3)
Forced Attrition via Civilisation Initiatives and Side-Effects that Undermine Alternative Initiatives

The CLD, shown as Figure 5, embraces all of the variables found in the prior representations in Figures 1, 2 & 3. However, what can be interpreted from the Figure 5 system representation is that whilst the level of forced attrition via civilianisation initiatives (Loop B11) may considered as an appropriate means of addressing concerns about frontline capability, and may be dominant in early phases of implementation, the unintended consequence (Loop R21) of undermining an alternative means of addressing frontline capability through the provision of staff development programmes (Loop B21) may be dominant in a later phase.

Figure 5: Defence Force Civilisation - reflected as the Shifting the Burden archetype

In particular, the suggestion, here, is that, for example, adverse impacts may arise as the consequence of increased uncertainty about the future experienced by Defence Force personnel. Such adverse impacts may relate to a lowering of morale, an increase in voluntary attrition, both of which may subsequently impact adversely on frontline capability.

In particular, the suggestion, here, is that, for example, adverse impacts may arise as the consequence of increased uncertainty about the future experienced by Defence Force personnel. Such adverse impacts may relate to a lowering of morale, an increase in voluntary attrition, which would denude the Defence Force of key personnel, not only impacting directly on frontline capability (as shown in Figure 3, Loop R11), but also, indirectly by undermining the effectiveness of staff development projects (as shown in Figure 5, Loop R21). As such, any staff development programmes (Loop B21) that may be deployed to complement the civilianisation initiatives would be undermined. Such a scenario can be identified as reflecting the Shifting the Burden (StB) systems archetype – recognising the unfortunate side-effect that one fix, often the quick fix, will undermine the use or effectiveness of an alternative fix, perhaps forcing ever-more reliance on the quick fix that has diminishing positive impact on the one hand (Loop B11 via Loop B1), but increasing adverse impact via Loop R21, on what would otherwise be the beneficial playing out of Loop B21, on the other hand. In essence, the more we resort to the quick fix (Loop B11), the more dependent we become on it, and the more we subsequently undermine our ability to put in place a long term solution (via Loop B21).
The Composite CLD

Figure 5: Defence Force Civilianisation – reflected as the complete CLD

Figure 6 embodies the systemic relationships initially shown in Figures 1-3 and 5, and provides a more comprehensive representation of the wider problem situation, and of course, represents considerable complexity in terms of the multitude of variables, relationships, mutual dependencies etc that are captured. However, it is worth noting that such complexity is very much reduced when subsystems structures are identified as causal loops or systems archetypes – in a sense where the causal loops present a somewhat elevated or helicopter view.

In addition, we see the benefit of causal loop representations as leading to effective analysis, that is, reductionist analysis in the first instance, identifying cause-effect relationships, and the identification of mutual relationships between pairs of variables and groups of variables. However, we also see the benefits of synthesis, the identification of causal loops, the identification of interacting causal loops, the identification of high level systems archetypes, and the identification of interaction between archetypes.

Indeed, the whole problem space, here, may then be conceptualised as the dynamic interaction of three common and recognised systemic structures, patterns or archetypes, rather than the dynamic interaction of seven causal loops, or rather than the complex interaction of a multiplicity of variables and relationships. As such, we develop an even more elevated or macro-view, a satellite view rather than a helicopter view of the managerial problem space.

Here, we note how the interaction of the Limits to Growth, Fix that Fails and Shifting the Burden archetypes may shape individual behaviours, and systems behaviours and outcomes – the latter being what we may regard as the emergent properties of the system. In this respect, we may note how the relationships and dynamics of Loop R1 in a first phase may influence the dynamics within Loop B11, which in turn, influence the later phase dynamics of Loops R1, R11 and then Loop R21, without any further intervention beyond the introduction of the forced attrition initiatives. (Wolstenholme (2004).

In illustrative interpretation, we note how, starting with Loop B11, growing concerns about frontline capability generate a need to better resource frontline capability, then a need to find cost savings to
fund frontline capability developments, creating a commitment to civilianisation initiatives, the introduction of forced attrition via civilianisation, that bring about desired associated cost savings which in turn enhance management ability to reallocate funding to frontline activities, thus ameliorating concerns about frontline capability.

However, the increased use of forced attrition via civilianisation initiatives breeds uncertainty about the future amongst Defence Force personnel undermining morale (Loop R11), so that with staff seeking greater security and satisfaction elsewhere, staff resignations/voluntary attrition will rise (Loop R21). Such staff losses not only undermine frontline capability directly, but also undermine the effectiveness of staff development projects that would build on existing capability.

Here, we recognise that some outcomes are not merely the consequences of deliberate and intentional individual behaviour or action, or a single cause. Outcomes may be unintended or unwanted, and they may be consequence of systems behaviour, systemic interaction, and it is such outcomes that may be described as the emergent properties of the wider system behaviour. As such, the “system” cannot be managed as a collection of individual entities or actions. The problem situation or system needs to be managed as a set of interacting entities, that is, as a set of interacting relationships, loops and systemic structures or patterns.

If so, points of intervention to address unwanted consequences must be identified, and such points of intervention or leverage points should be chosen where they may have appropriate impact. For instance, addressing morale can be seen to have impact within Loops R11 and R21. In Loop R11, lifting morale would lower voluntary attrition and thus lessen concerns about frontline capability. At the same time, in Loop R21, lifting morale reduces voluntary attrition and contributes to the complementary and de facto effectiveness of staff development programmes on frontline capability.

So, morale would be an important point of intervention, or leverage point, for what has been represented as a closed system. A further example would be an intervention that seeks directly to reduce voluntary attrition. However, a subsequent Defence Force decision to move away from forced attrition to natural attrition - whereby retirement and contract termination would become the trigger for consideration of whether roles and functions would be classified as redundant - would impact positively on a chain of variables. Such intervention would lead to reducing uncertainty ..., improving morale, and reducing voluntary attrition etc.

In our systems view, we regard the intervention as impacting directly on the closed system at the leverage point. However, whilst a micro-level perspective may focus solely upon the leverage point, and actions that impact directly on a single entity, such as morale – the systems perspective would seek to reflect an awareness of how such actions would have consequential and systemic impact throughout what has been represented as the wider closed system. In particular, we would seek to evaluate whether contemplated action would impact a system manifesting unwanted outcomes and undesirable systems behaviours so as to generate positive outcomes and desirable systems behaviours.

**SUMMARY**

Prior observations imply that such insight about intervention and leverage would not be so readily recognised without the systems representations. However, such insights are given face validity when we reflect on Lewin’s steps or phases (Lewin, 1958) for the effective management of change: the need to unfreeze beliefs about the existing situation, the value of the a systems perspective in facilitating the managerial efforts to help individuals to recognise, understand and accept the need for change, to buy into change, to be receptive to change, to want to change and to support change - thus increasing the chances of a successful change process. Then as Lewin suggests, it is beneficial to guide or lead people in a manner that creates and maintains effective engagement in change, that builds a sense of involvement, that sustains morale, and that makes apparent the benefit from change or from involvement and participation in that change.

We also note face validity arising from Bradford and Cohen’s (1998) notion of transformational leadership, as it relates, for example, to creating a shared vision, unfreezing the problematic situation, reducing resistance to change, and cementing commitment from people for what they have helped to create, and for what they see as creating personal and organisational benefit, rather than imposing change from about uncertainty about motives, the future etc.. If as Burns (1978) claims, leadership is
also about developing individual and organisational capability, then intervention that suggests that existing contributions, roles and functions can be dispensed with, that diverts people away from their perceived areas of competence to lesser civilianised roles (in this case), and away from areas where they have invested in personal development or personal growth to be of value to the organisation, will only serve to lower morale, individual and organisational productivity, and commitment to other proposed changes.

The paper demonstrates how, in the context of a civilianisation change initiative, a complex of individual actions, cause-effect relationships, mutual dependencies etc can not only impact the behaviour – actions and responses - of individuals and groups, but effect behaviours and outcomes at the level of the wider system in unintended and unanticipated ways that may be described as the emergent properties of the system. The paper has sought to show how recognition and understanding of systemic structure may elevate what otherwise resides as anecdote to insight, and also convey insight and meaning (Lissack, 2004). It has done so by demonstrating how the recognition of embedded common systems structures, that is systems archetypes, such as Senge’s Limits to Growth, Fixes that Fail and Shifting the Burden, may elevate understanding to a meta-level involving interacting systemic structures rather than the interaction of multiple individual variables.

REFERENCES

-95509-