The use of metaphor within a soft systems intervention; a fairy story as an 'alternative rich picture'

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This paper presents the case study of a management information system which is seen in some parts of the organisation it serves, as problematic. This was the typical trigger for a soft systems approach intervention. The research for the case study was action research, using a soft systems approach. A turning point in the study provided an important methodological insight, which is equally relevant to other systems thinking; the perceived need to find a novel communication method, to overcome management resistance.

A major cause of conflict, had been the attempted use of data flow diagrams as a communications device with senior management. The blow to managerial pride this techno-speak presentation had caused, left deep and enduring scars which might best be thought of as negative appreciative settings (after Vickers). Such is the antipathy that in some minds, the system had almost become the 'scapegoat' for any problems in this part of the organisation. Yet there was a very clear organisational need for the system to be used satisfactorily.

During the intervention a rich picture, in the style of a data flow diagram, was constructed once more as a communications device, for use with the technical specialists. This had limited success, even to those familiar with complex diagramming techniques, unfamiliar symbols and conventions were seen as problematic. This can be equally true where influence diagrams and 'ithink' type diagrams are to be used.

This reinforced the view that often the real value of rich pictures lies in the process of their production, rather than the end product. Yet the question of how to communicate and share perceptions with both sides still remained. Ideas from Morgan's 'Imaginization' led to perceptions of the situation resembling a mythical kingdom and the idea of a fairy story as an alternative rich picture, or a 'management toy' (after De Geus), perhaps from this, a novel means of communication is possible.

The story does not have an ending - happy or otherwise, that will be added by the participants in the experiment. If it causes some learning in those involved in the situation, it will have been a success. Children use fairy stories to learn about the world - why should managers not use them to help make the transition into successful systems thinking about the world ?

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Introduction

The modern executive trying to manage in the current turbulent business environment faces many strategic challenges. They must, 'see the big picture', 'take a helicopter view', 'act locally, think globally'. In response, the academic and consulting world constantly adds to its portfolio of ideas which might offer a means of assisting. Systems thinking, in its widest sense, is an essential part of that portfolio.

What is systems thinking ?

Senge(1990) states that; 'systems thinking is a discipline for seeing wholes.... a framework for seeing inter-relationships ... for seeing patterns of change rather than static snapshots'. Checkland (1981), referring to soft systems methodology (SSM), is concerned with; 'an urge to bring about improvement in a social system in which there is felt to be an ill-defined problem situation'. Add to this the view of Jackson (1993) who claims that; 'systems thinking is about improvements in organisations and society which should benefit all the stakeholders and all the participants'.

It seems therefore that systems thinking is about... seeing wholes ... understanding and improving problem situations ... to benefit the stakeholders and participants.

Using systems thinking

The common starting point for 'systems thinkers' is the perceived need to understand the nature of some human activity system. Checkland(1981) thinks in terms of 'a problem situation unstructured' which is interpreted into ' the richest possible representation of that situation'. The building of rich pictures is an extremely valuable way of trying to understand a human activity system. A large part of its value is in the building - the process of mapping, thinking and making connections, perhaps seeing things in a new light - the process is at least as valuable as the product.

The consultancy methodology described by Lane (1994), as used in Shell, has the same generic foundation as SSM - the starting point being an issue - models are created in a move towards improved understanding and learning, as the basis for resolution, rather than solution of a problem situation.

Senge(1990) sees the beginning of systems thinking as the discovery of mental models, while in Senge & Sterman(1994) thinking about actual use, this is further expanded to the mapping of mental models, as a means of making explicit the assumptions present. Wolstenholme(1994), describing a systematic way of modelling the activity system, sees the starting point as merely 'knowledge capture' - what a wealth of activities could be encompassed in this two word phrase. The word knowledge has so many connotations - knowing is in the mind - capturing what is in the minds of others, implies taking away - depriving the owner - when the reality is in the need to share and make use of these perceptual models. These models are composed of many things; thoughts, half-remembered words, experience, experiences, impressions of events, all filtered by a cognitive framework influenced by a personal mindset, how are they to be shared ?

Forrester whose own starting point is to 'collect information about the problem', (Forrester(1971)), aptly sums up the situation; 'the mental model is fuzzy. It is incomplete. It is imprecisely stated ... within one individual a mental model changes with time and even during the flow of a single conversation.'

Thus capturing knowledge or information about something which is itself shifting and changing, must be inherently complex and problematic. This attempt to describe a perception of a problem which may well be seen as separate facets, by different participants, can never produce a realistic representation. There is also a very real danger that the representations in whatever form they are created, are structured by what Morecroft(1994) refers to as 'the dominant management logic', all participants constrained, so that the possibility of shifts in thinking diminishes. Senge(1990) echoes this concern, warning that failing to appreciate mental models has undermined many attempts at systems thinking. The need to gain perceptions of the situation in an attempt to bring about improvement remains, so any means of creating objects which might help to structure and bring about debate is worth exploring.

When investigating a physical system a common procedure is to 'shock the system' to see how it copes and the effect created. Is it possible perhaps to 'shock', or at least create a tremor in a human activity system, in order to challenge the dominant management logic in a move towards causing metanoia.

How then to shock the managers ? or at least challenge the typical entrenched, rational mindset. Handy(1994) advocates thinking the unthinkable, but this is not enough, it needs to be translated into sharing the unthinkable thoughts. De Geus(1988) talks about the need for management toys as transitional objects to stimulate play which leads to learning. Wolstenholme continuing this train of thought, suggests managers need teddy bears to help them learn.

The search is therefore for a transitional object or plaything, which captures enough of the situation to stimulate debate, which is presented in a way that is outside of the typical management frame of reference, a different way of looking at what everyone sees, but does not see. The author felt that metaphor might be useful - not as a physical representation - but a shareable mental model - available for non-threatening open debate. It might amuse, can be laughed at, condemned and criticised but it might cause a ripple in an embedded management mindset, it might promote thinking and perhaps learning.

This is the story of the metaphor in use. It is concerned with an attempt to facilitate improvement in a problem situation, initiated as a use of soft systems methodology, the would-be problem improver, building on De Geus's ideas of management toys, created an 'alternative' rich picture in the form of a fairy story, to challenge the dominant management mindset. The need for a rethinking of the rich picture was caused by the singular failure of the initial efforts, which itself challenged the perception of the problem improver, and created learning about the use of systems thinking.

The original case study will be presented in traditional manner, together with the rich picture, this will be followed by the management fairy story, and a discussion of what seems to have been learnt from the exercise.

Case Study - This is concerned with problems associated with a management information system in a large organisation. The system was introduced at a time of major organisational change. Its primary function is the provision of management control information to central management. The primary operational users and providers of data are the administrative workers at the periphery of the organisation. They perceive the system to be difficult to use, unfriendly and not particularly useful. Their immediate managers do not regard the system highly, seeing it as a tool of the centre which has little relevance for themselves. They do

little to ensure adequate use of the system, which has resulted in a build up of poor quality data. The poor quality data is itself a contributory factor in the limited benefits which are available from the system. These managers have little appreciation of the key organisational role the system could play.

On the other hand those at the centre seem unaware of the very real problems in using the system, particularly since there is little help available, and those at the periphery are overburdened with other responsibilities. The unfriendliness of the system became more apparent with the introduction of the 'Windows' interface as a standard for other applications. Administrative staff, some of whom may not be very comfortable with IT, have to move from a multi-coloured WIMP environment one minute, to old-fashioned green type on a dark screen, needing complex function key use, the next. People thus get confused and make mistakes, but the old-style system is unforgiving, there is no comprehensive help system, so resentment increases.

Serious unrest among professional workers at the periphery caused the formation of a project to produce local information systems to help ease the work overload. The would be problem improver, an information specialist with a strong interest in systems thinking, was part of the project team.
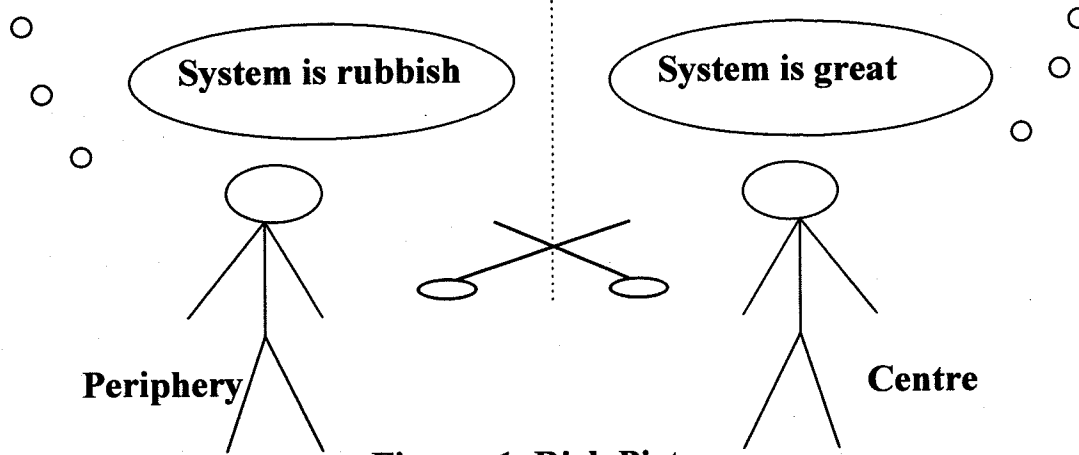
It was only when work was to start on local systems that the existence of the central system became known, to the would-be problem improver. In keeping with current thinking, it was seen as essential for organisational systems to be coherent and complementary, so that an investigation of the central system was necessary, this was how this work began. This rationale also follows the advice of Checkland(1981), recommending that when studying service systems, the system being served must be considered first.

One of the common stories recounted by peripheral managers, was of their being subjected to involvement in the development process of the central system. The view that participative system development is beneficial, is commonly held by Information Systems developers, making the process truly participative is however incredibly difficult. The initial major problem being that of communication. Data flow diagrams are believed to be useful as communication devices, used here they were disasterous, the 'incomprehensible wiring diagrams' were commonly mentioned. This initial involvement with the system had led to a very negative view, what Vickers might describe as negative appreciative settings.
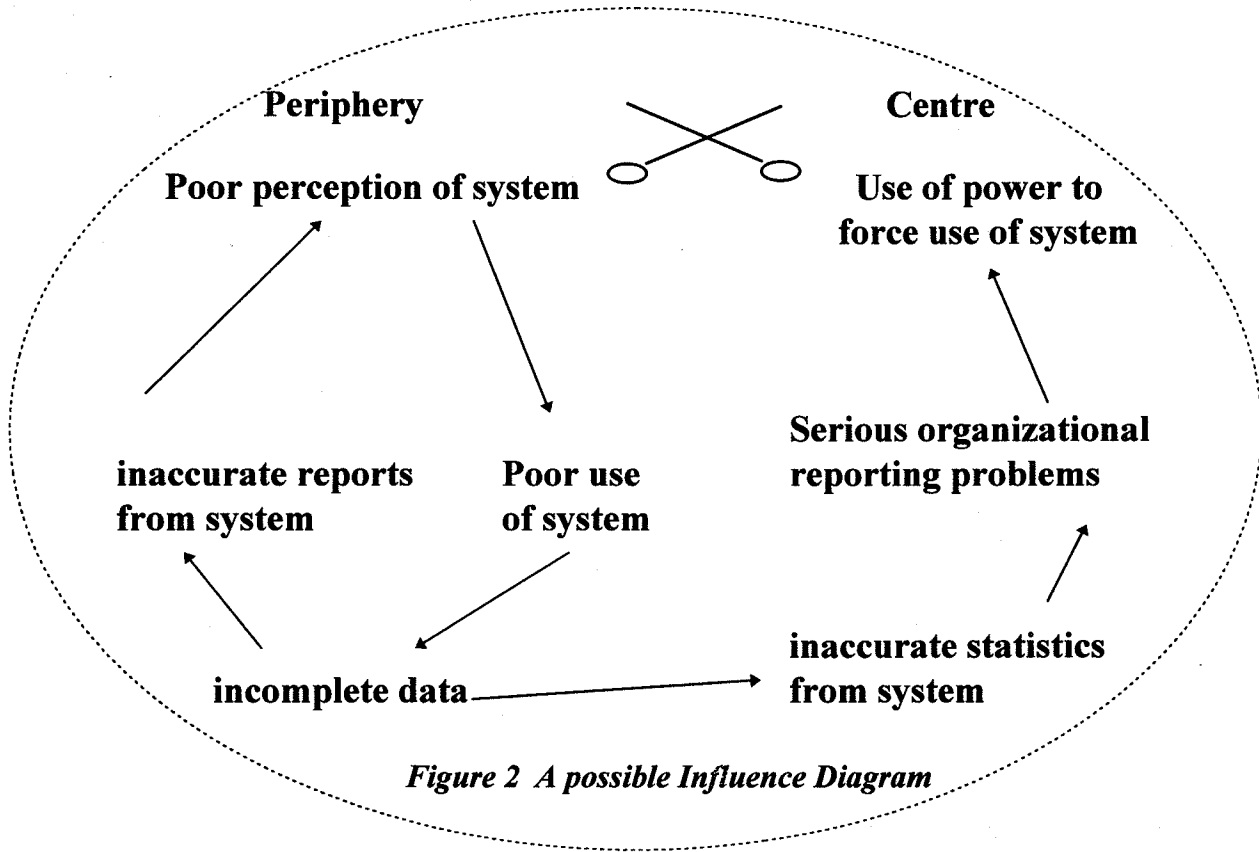
The problem seemed therefore to be, to give both sides a view of what it is like to be the other, another communication problem, the words of Rabbie Burns, 'there's none so blind as those that will not see', regretably seemed appropriate. Various methods were tried, a data flow diagram style rich picture was constructed to use with the system developers. this left them as bewildered, as the original wiring diagrams had left the managers.

Of course -
I don't know how to use it
or what it is capable of
or the implications for
the organisation of
not using it

Of course -
I don' know how hard it is to use
or how difficult it is to get help
or how seriously over-stretched
your resources are

System is rubbish

System is great

Periphery

Centre

Figure 1 Rich Picture

Periphery   Centre

Poor perception of system   Use of power to
                                      force use of system

inaccurate reports   Poor use   Serious organizational
from system   of system   reporting problems

incomplete data   inaccurate statistics
                                      from system

Figure 2 A possible Influence Diagram

A rich picture of the problem situation
Figure 1 here

A possible influence diagram being :-
Figure 2 here

The would be problem improver is an enthusiatic user of soft systems thinking, particularly rich pictures, some of which are purely in the mind, perhaps what Checkland(1990) referrs to as Mode 2 SSM. The mental pictures had involved representing characters as icons, one seeming to be dragon-like in guarding territory, another as a king, perceptions which had arisen from the contextual study of the system. The idea occurred, to use them to build another representation of the situation.

A fairy story - a rich picture in words

This is the story of the artefacts of Merlin the magician, a small magician who becomes a large Dragon, many Barons, a large and small fairy.

The land of Flin had long been ruled by the lords of Weeds, but a mightier lord in a far-off place decreed that the land of Flin should be free, that the King of the land of Flin and his court would henceforth rule instead. Though the King and his court would need to send offerings regularly to the far off place, or they would receive no more gold. There lived in the land of Flin a mighty magician Merlin. He was much troubled because he knew the Lords of Weeds had many artefacts to rule the Land of Flin, but the King of the land of Flin had none. Merlin gathered together with other wise ones and it was decided that new artefacts would be specially designed for the land of Flin. The King listened to the gathering of the wise ones and knew they spoke truthfully, he ordered that skilled workers from the mines should be released to work on the new artefacts.

The land of Flin is divided into several parts - at the court of the King live Merlin and other wise ones, in other places live mighty Barons who have their own dominion. In each place the chief Baron amongst them also sits at the court of the King. The mighty Barons were much concerned with ruling their own places and had less concern for the problems at court. Time passed and much work was done on the artefacts. One of those released from the mine, came to have dominion over the building of the artefacts, and became a small magician. There was also appointed keepers for the artefacts. Merlin and the small magician decided to consult the Barons about the building of the artefacts so a gathering was called. The Barons did not know of the building of artefacts, but out of regard for Merlin, and fear of the King, they went to the gathering. The small magician and his followers were much practised in the ways of building artefacts and wanted to tell the Barons the wondrous things that they were doing - but they spoke in the tongue of Stradis and the Barons did not understand.

More gatherings were held - but still the small magician spoke in the tongue of Stradis (with pictures), and still the Barons did not understand. The Barons became cross with the small magician and spoke slightingly of the artefacts being built. The small magician became cross with the Barons, not seeing why they did not understand, slowly the small magician turned into a large Dragon, guarding the artefacts from the Barons and their followers.

Time passed and one by one the artefacts that Merlin had seen the need for were finished. All were seen as good and useful, except for one. This artefact was the one that Merlin himself had need of, it told him about the workings of the mines, and provided offerings for the Lords in far-off places. It was the most complex, because the Barons and their followers had to place many offerings into the artefact. The Barons and their followers did not understand the ways of the artefact and did not always place the right offerings into it, so that Merlin was much concerned.

There was at this time, much unrest in one of the places of the Barons, the Chiefs amongst the miners were very angry and demanded that 'Something be done'. The Chief Baron from this place decided that help was needed, and proposed that special new local artefacts would

be built to help the Chiefs amongst the miners. The Chief Baron called for volunteers to build these new local artefacts. Two fairies who lived in this place volunteered, there was a large fairy who worked amongst the Barons and knew the way of Barons, and a small fairy who came from the mines, but was versed in the building of artefacts.

The small fairy had never been to the court of the King and knew nothing of Merlin's artefact, but was soon to find out.

The two fairies started work planning artefacts for the Chiefs amongst the miners. As the small fairy started to investigate the artefacts that already existed in the place of the Barons, she heard tell of Merlin's artefact, and heard many slighting words about it. The small fairy was very concerned, having studied the power of artefacts, with a very famous wizard at another place, and knowing about such things as 'artefact strategy'. She knew that the Barons local artefacts must fit together with Merlin's artefact, or there would be greater discord than ever in the Baron's place, and at the court of the King.

While studying with the famous wizard at another place, the small fairy had learnt of a powerful spell, and decided to use this to help in the planning of the local artefacts. This powerful spell was wondrous, for not only did it help in finding out about the artefacts to be built, it helped the small fairy to build devices, to help in her work in the mines.

The small fairy realised that it was important to find out why the Barons spoke so slightingly of Merlin's artefact, and so a plan was made. She was still working in the mines, and building artefacts for the Barons, but instinctively she knew that unless Merlin's artefact could be made to work, there was little hope for new local artefacts. The small fairy started to consult many people in the land of Flin about Merlin's artefact, many stories were told, especially the story of the tongue of Stradis, which had caused much confusion. Merlin helped the small fairy, so did the Keeper of the artefact and so for a while did the small magician.

Into the land of Flin came a new king, one who offered audience to any from within the land, even small fairies, so an audience was requested and it was granted. The small fairy spoke to the new King about many things in the land of Flin, about the great distance between the Barons and the court of the King, and the great distance between the workers in the mines and the Barons. She explained about the work being undertaken with Merlin's artefact, and how important it was for those who worked in the mines to use the powerful spell. The King listened kindly to the small fairy and said that she should not worry about using the powerful spell, for it was good.

The small fairy felt much better knowing that the King approved, realising that he was a very wise King. The small fairies' work continued, most of all now she wanted to make the small magician and the Keeper of the artefact, understand about the Barons' problems with the tongue of Stradis, and seek ways of changing the unkind view the Barons had of Merlin's artefact. The small fairy had been warned by wise ones in the Land of Flin that the small magician had very sensitive toes, and that on no account should she tread upon them. Unfortunately the small fairy has a tendency to become very engrossed in the work at hand, and in her enthusiasm to help Merlin and the Barons solve their problems, she forgot the wise ones warning, and she did something which made the small magician think she was treading on his toes, although this was not the case. The small magician changed at once into the large Dragon, and smote fire and smoke upon the small fairy, and spoke slightingly of the use of the powerful spell, not knowing of the famous wizards who used it, and the small fairy cried. When the Barons heard of the Dragon's actions they shook their heads at the small fairy and said, 'we told you so'. They told the small fairy not to worry, for they had a plan to vanquish

the Dragon outside of the land of Flin, to replace him with outside keepers of artefacts. This did not please the small fairy, who knew of other Barons who had employed outside keepers of artefacts, and who had suffered much regret because of it. The small fairy had long ago realised that few Barons understood the real value of artefacts, and the powerful magic they were capable of, and the small fairy was much troubled.........and the story continues

Discussion

The question which will now spring to many minds is, whether the alternative rich picture was a success. In reality it not possible to know its impact. To judge the success of any change initiative would require the ability to measure mindsets, and thus the change in mindsets. Perhaps it is possible to determine qualitative indicators to measure attitude, often they themselves will cause shifts in the mind, as reflection on the situation takes place. This initiative may well have had no impact whatsoever.

As far as the situation goes though, it is possible to say that there appears to have been some movement in thinking on the part of the centre. For the peripheral managers the situation is somewhat different. They now seem far more aware of the importance of the system, however they still seem not to know how to manage its use, and are all too ready to try to give the problem away.

The would-be problem improver felt that the major problem with the system was the lack of ownership by the periphery against the strong ownership felt by the centre. There seems to have been some moves towards resolution, but it still remains as the challenge for the future.

There are a number of important issues in relation to the use of the story. One of the major influences on the use of metaphor as a creative thinking technique, in relation to organisations, is 'Imaginization' (Morgan 1994). This outlines the use of metaphor in a number of situations to free minds and promote useful thinking, which is the intention here. It warns of dangers, which are equally relevant here.

> 'Metaphors create insight but they also distort'
> 'they have strengths, but they also have limitations'
> 'in creating ways of seeing, they create ways of not seeing'

so some messages are made clear, others become hidden. This highlights the need for careful consideration by the metaphor creator; a personal weltanschauung or mindset cannot be hidden, it needs to made explicit, as far as this is possible. In addition careful reflection is needed in relation to the magnitude of change envisaged, is it a small pebble in the pond causing ripples, or a large rock which will cause cataclysmic havoc to all in the habitat?

Though it is as well to remember that no matter what communication method is attempted, the process of communication can never be deterministic. Vickers(1983) sums up well:-

'It is widely but mistakenly supposed that communication consists primarily in sending messages.....in fact nearly all the problems of communication lie at the receiving end. Communication takes place only when someone receives some message which is meaningful to him; and this meaning may or may not bear any relation to what the sender was trying to convey.'

Conclusion

One of the major concerns for any systems thinker in a problem situation such as this, is their lack of real power, to take action to make changes. The final stage of the seven stage model of SSM, for example, is 'to take action to improve problem situation', (Checkland,1981), yet so often these are 'hearts and mind' changes, which can only happen by causing learning to take place, and no-one can be forced to learn. It seems therefore that systems thinking, in whatever form, is about what Habermas terms, communicative, rather than purposive action.

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