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Systems Thinking by Stealth – How to 'Wash the Great Unwashed'!

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Abstract

Is the systems approach as widely used as one might expect?

This paper argues that it isn't. This is not because the approach is flawed or weak. Rather, it is because any hint of portrayal of the systems approach as 'the method to help you change your mental models' is likely to be perceived by successful managers more as a threat than a benefit - many people are happy their mental models, and just don't want them changed.

How can this resistance be overcome?

This paper makes a suggestion based on the insight that, before you can adopt a new mental model, you have to discard the old one; before you can learn something new, you must unlearn something old. And in general, unlearning the old is much harder than learning the new. Perhaps we should therefore talk not of the 'learning organisation', but of the 'unlearning organisation'.

Introduction

Systems thinking and system dynamics are enormously valuable approaches to solving complex problems. Complex problems are everywhere, but unfortunately, there is a large community of people wrestling with these problems who have no idea what systems thinking and system dynamics are, and so have no concept of how they might beneficially be used. Also, at first sight, causal loop diagrams, plumbing diagrams and models can appear to be more complex than the problem itself, and even more difficult to understand.

How, then, can the approach, tools and techniques of systems thinking and system dynamics be offered to those who know nothing about it – and without putting them off with all the jargon? This paper, based on my own personal experience, explores three different approaches. Two of these usually don't work, but the third has a greater likelihood of succeeding, and it is this third approach that I now adopt whenever I can.

From a pragmatic point of view, this third approach usually works (at least better than the other two!), but the fundamental problem still remains – why is it that so many people are reluctant to use techniques which are potentially so powerful? The second part of this paper therefore digs more deeply, and suggests that the problem lies in what many people consider to be a major threat. A threat made explicit in the way only systems thinking and system dynamics can. A threat that implies that my mental models are in some way flawed, incomplete, or just plain wrong. And if I am a successful businessman or organisational leader, if I have achieved that success by the (usually unknowing) application, year on year, of what you are giving some fancy name to (yes, that's how I interpret 'mental model'), then the last thing I want to happen is for these instincts, these behaviours and these successes to be challenged.

And so the culmination of my paper is indeed a challenge to mental models. Our mental models. For, at the end of my paper, I will assert that the term 'the learning organisation' is (inadvertently) focusing attention in the wrong direction. What we need to be talking about is not the learning organisation, but the **un**learning organisation...

Can you lead a horse to water?

We all know the old story about horses and water – and one of the reasons why such old stories hang around for so long is probably because they contain more than a grain of truth. And in our case, the 'horse' is an organisation that could gain enormous benefit from the 'water' of systems thinking and system dynamics. But since most of the organisations that I deal with don't have the remotest idea what systems thinking is, they surely need a lot of 'leading' – and even when they've been led someway down the road, there are many 'old lags' who just don't have the energy to follow, or who dig their hooves in so deeply, they just refuse to budge.

Maybe my experience is unrepresentative, and – perhaps as a result of the accidents of fate - I just happen to have come across the systemically unwashed. But I wonder. It is very easy for a community of enthusiasts to become closed – from the British plane spotters who were arrested in Greece a few months ago, to football supporters who travel to every game – with the result that 'we' are always talking to 'each other'. So maybe one of the challenges that continues to face the world of ST and SD is to become more visible to the systemically unwashed, so that these wonderful tools and techniques are vociferously demanded by the world at large.

But a much more immediate and prosaic need is to be able to respond effectively when a systems thinking opportunity arises, and this is the subject of my paper. It is of course based on my own personal experience – which, by definition, must be different from yours. But maybe there are some threads that resonate with you, and maybe there are some insights that make sense.

How, then, can you excite the imagination of people who have no idea what systems thinking is, and have never heard of a stock or a flow? How can we 'wash the great unwashed'? Or, to pursue my other metaphor, how can we lead those unwilling, ornery horses to water, and make them drink? Over my career, I have tried three different ways…

Method 1 – 'Bronco busting'

One way of leading the horse to water is by what I call 'bronco busting'. If you've ever been to a rodeo in the Western States, or if you've ever seen the films, you will have seen 'bronco busting' – a 'sport' in which a cowboy, usually someone about the size of any three normal human beings, bestrides some poor horse, gripping its stomach with his enormous, bandy legs. There then ensues a battle of wills: the bronco jumps, bucks, kicks, leaps; the bronco buster, holding the reins with just one hand, tries to stay on the bronco's rearing back, seeking to avoid putting a new, and realistic, meaning on the cliché 'bite the dust'. To the cheers of the crowd, the archetypal battle of brute force (as shown by the cowboy) versus guile (as shown by the horse) unfolds, and there can be only one winner.

Some of my early experiences in selling systems thinking were very similar, although at the time I was wearing a pin-stripe suit rather than a fringed buckskin waistcoat. The context, however, was just as dramatic.

I'd be sitting in a meeting, and – as happens very frequently – the discussion was rambling, unstructured. But deep within it – although the participants had no idea that this was happening – everyone was talking about systems thinking. People would give snippets of cause-and-effect relationships; people would suggest policy interventions; some people would see the bigger picture; few people were listening; everybody saw only their part of the issue. As a junior participant, I said little, but listened a lot. And as the meeting went on, I would begin to put the pieces of the puzzle together, and, on my jotter, I would sketch the causal loop diagram that seemed to me to capture the essence of the problem. I'd then identify the key stocks and flows, and scribble the corresponding plumbing diagram.

And when I was happy with that, I'd look around the meeting, and start fidgeting, rustling papers, and doodling as I became increasingly frustrated with my colleagues' lack of ability to see the whole picture. After a while, I'd catch the chairman's eye and say, "May I chip in, please?" – in response to which I would stride to a flipchart, draw the causal loops replete with S's and O's (or +'s and -'s if I thought the community had a mathematical bent), and then the plumbing diagram, and say, "This is my summary of what we've been talking about, and it seems to me that the key things we need to do are [this, this and this – whatever was relevant], for if we do these things, these constraints are relieved, so allowing this reinforcing loop to operate in growth mode, which is what we want to happen. I reckon I could build a computer simulation model over the next week or so to show how fast we can grow."

At this point, I would feel pleased with my intellectual prowess, and the fundamental contribution I had made to the meeting. And so what happened next was as much a surprise to me as a sudden buck from that ornery bronco.

"What on earth are all those funny +'s and -'s?", asked the production manager.

"What, *precisely*, do you mean by 'the effect of our salary structure on staff morale'?", asked the personnel manager, with more than a glint of malice in her eye.

“What on earth are you talking about?” asked everybody else.

The bronco bucked, and I hit the ground so hard I bit the dust with my back teeth! No way could this horse be led to water!

And the first time this happened, I was so surprised! I really thought I had ‘solved the problem’, and I was really trying to be helpful. But I was young.

Method 2 – “Pulling the reins”

A second approach to leading that stubborn horse to water is not to sit on its back and drive it, but to pull on the reins and coax it. And in an organisational context, pulling on the reins maps on to convincing the boss, and then using the boss’s authority to pull the team along.

So, as I became more experienced, my approach evolved. I learnt that putting a complete systems thinking solution on a flip chart in front of a group who had no knowledge of the process created all sorts of problems: some people were overwhelmed by the ‘complexity’ of a real causal loop diagram (despite the paradox that, as we all know, such diagrams tame complexity); others would get significantly hung up on the S’s and O’s; some people just don’t like thinking in diagrams; and some people sincerely held genuinely different mental models, so that my diagrams just didn’t resonate with their experience. And on top of all that, there are all the inter-personal issues of people not wishing to be ‘shown up’ in front of their colleagues, of the resistance of the incumbent manager to suggestions from an outsider (and a junior one at that), of the implied criticism that people with years’ of experience have all missed the point.

No more would I try to intervene towards the end of the meeting with ‘the answer’; no; I would be more subtle. Rather than trying to participate in the meeting, in public, I would bite my lip and bide my time. But after the meeting, I would seek a meeting with the person that was the most appropriate ‘boss’ of the people who had attended the meeting. Then, on a one-to-one basis, I would take the boss through the systems thinking solution I had devised.

My intention, of course, was that a one-on-one with the boss was a much safer environment, and that, if I could impress the boss, the boss would use his or her authority to influence the group. And, sometimes, this has been quite successful. If the boss is tolerant, if the boss has some empathy with systems thinking, if the boss has the patience to listen to the explanations, then it is indeed possible for the boss to say, "Mmm. I see what you mean. I'm beginning to understand that diagram now." This, of course, is a glimmer of hope – the boss is listening and being supportive, and, if the boss feels that the issue is pressing enough, the conversation will move towards how various other people in the team can be brought along. This then leads to more one-on-one discussions, maybe a workshop or two, and even – for the enthusiasts – a 'master class' in which the main principles of systems thinking can be explained and explored. And, over time, systems thinking can be gradually incorporated into the business activities, and maybe some modelling can begin. Yes, convincing the boss, and acting in the boss's reflected authority, can be a very powerful mechanism indeed.

But if the boss is too busy, dismissive, abrupt, then this approach fails too; and because the boss remains unconvinced, the opportunity for lobbying amongst the boss's reports is irretrievably lost.

But either way, over time, I discovered that this approach too had a fatal flaw: the solution I was pushing was 'mine' – there was no sense of ownership, or even of contribution, from anyone else.

Method 3 – "Providing the hay"

This third method is neither a battle of wills, nor an appeal to the authority of the boss – rather, it is an attempt to stimulate interest so that an appetite is built to learn more. This approach works best in small groups, and is a natural adjunct to ordinary meetings. In fact, it is a variant on the 'bronco busting' approach, but rather than presenting 'the answer' in a manner which can appear to others as unbelievably arrogant, the discussion is influenced in a much more subtle way. And because this interaction is taking place in a group, it is very difficult for a single individual – even if the individual is the boss – to veto the discussion. So, if some momentum of enthusiasm is built up among some members of a group, the others tend to go along. This, of course, avoids the problem in 'pulling the reins' in which the boss blocks things out. But - most importantly – the essence of the approach is the involvement of all the interested parties, guiding them to use systems thinking, but without realising it.

An example. I was participating in a meeting at one of the UK's broadcasting companies, where a team of managers were discussing how to implement the latest cost cutting imperative. The atmosphere was tense, for – not surprisingly - nobody wanted to cut costs at all, but if this had to happen, each individual prayed that the axe would fall 'somewhere else'. So people were arguing special cases ("if we reduce the budget on TV dramas, our key producer will resign"), waving shrouds of various sorts ("if we cut our sports budget, the ratings will go down"), and arguing that we were all looking in the wrong place ("it's not our budgets that should be cut, but those in Head Office").

After quite a long time, I caught the Chairman's eye, and said something like (I can't remember the exact words, but these give the gist), "I'm getting rather confused – there are so many issues on the table. And it's all very complex. May I make a suggestion, please? It would certainly help me get my mind clear if I had just a few moments to think. Clearly, we are all under significant pressure to cut our costs, and we all have to do something about it. And we all fear some of the adverse consequences. I'd like to get a better understanding of just what these consequences are, and how they might impact what we do. I'd find it really helpful to take just a few moments to consider what the most important consequences are of cutting costs, ordering them a bit, and seeing if my grasp of the situation is anywhere in agreement with all of yours. Why don't we all take a few moments, and write down, individually, what we each think are the three most important consequences of being under pressure to reduce costs, and then share our individual views? That way, we'll be able to assess the extent to which we are, or are not, on the same page. What do you think?"

The meeting agreed, and, for the next five minutes or so, a welcome silence fell as we all noted down the three main consequences. I then went round the group, and wrote the various responses on a flip chart: responses such as "staff will leave", "viewers will go away", "our ratings will drop", "our quality will be eroded" and so on.

Once these were on the flip chart, a conversation started, quite naturally and without much intervention from me, regarding sequence ("Is the pressure on costs a direct driver of a fall in the ratings, or are there intermediate steps?"), and causality ("Why will staff leave? Is it because they are getting fired, so saving money, or because of a feeling of disaffection with a management style imposing cuts?"). Also, and again quite naturally, people started asking one another why they held particular views.

This is, of course, all good *Fifth Discipline* stuff (Senge 1990), as people articulated their mental models, and began to move from advocacy, special pleading and telling to exploration, understanding and listening. And all triggered by that very non-threatening suggestion of taking a few minutes in silence, and writing down the three most important consequences of being under pressure to reduce costs.

After a while, I again caught the Chairman's eye, and asked if I could go to the flip chart. "It seems to me," I said, "that as a result of this discussion there is now a strong consensus that the most immediate consequence of being under pressure to reduce costs is to put pressure on the quality of our programmes. We don't want to fire people, and there are lots of costs we can't control. But those we can control are things like whether we use expensive or cheaper sets, whether we have more or fewer cameras – those sorts of things. For sure, we all want the best, but if we are irrevocably obliged to reduce costs, then those are the kinds of costs that we could, if really pushed, cut. The debate is then one of quality – and the extent to which an erosion of our programme quality will have an impact on our viewer figures."

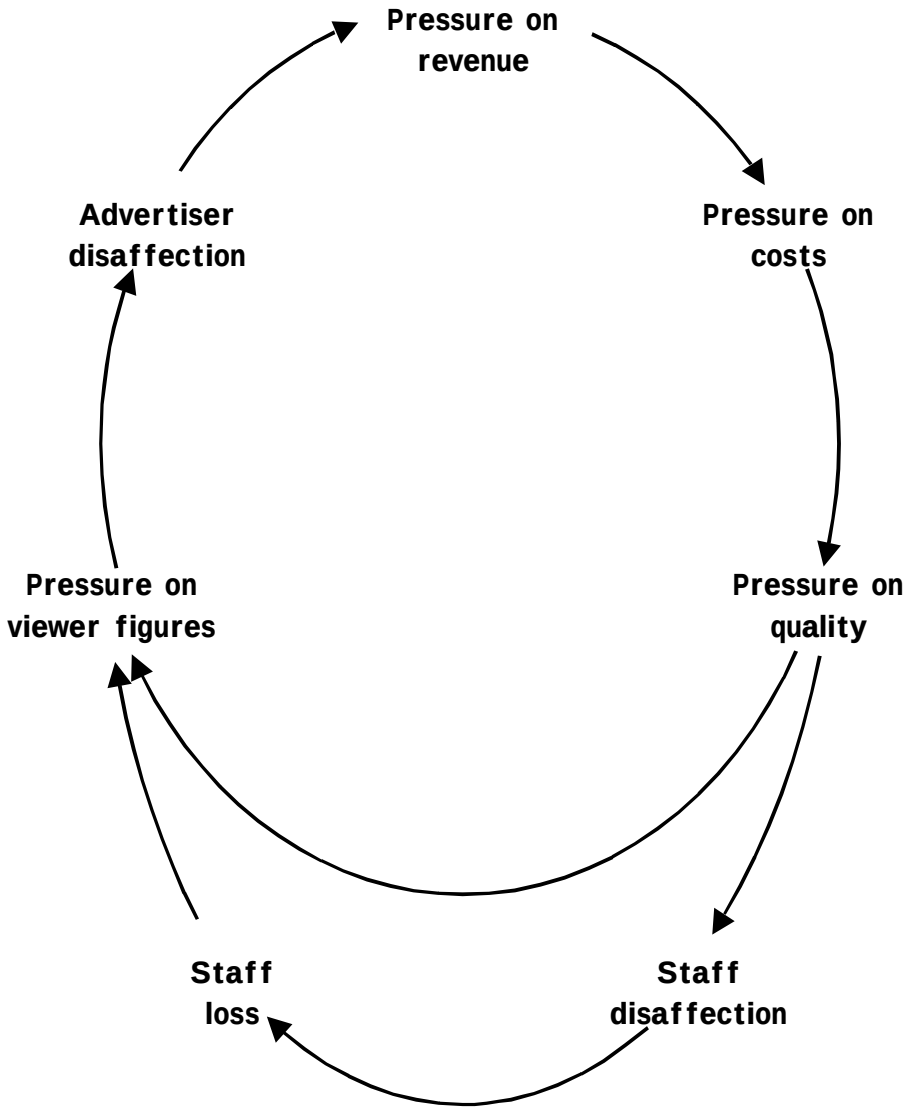
Nods and grunts of agreement from the group.

"But there's much more to it than that," said one of the presenters. "What about all the discussion we had about the effect on the morale of our people?"

"That's right," I went on. "As you correctly point out, given our very high commitment to quality, any possibility of a diminution in quality is likely to cause our people to become disaffected, but that is still quite a long way from people actually leaving (more nods and grunts). And, from what I understood of the discussion, it would be the departure of some of our key on-screen presenters and stars – and also, if it were to happen, of some of our main off-screen people such as producers and writers – that would be the main trigger to losing viewers (more nods and grunts). Losing viewers, and suffering a drop in the ratings, of course, would be a disaster – for our advertising income would surely fall."

"And that would make matters even worse," chipped in one of the producers, "for that would increase the pressure on costs even more! That would be a real vicious circle!"

"Mmm, it would indeed," I replied. "And talking of vicious circles, does this diagram make any sense?" And so I drew this on the flip chart:

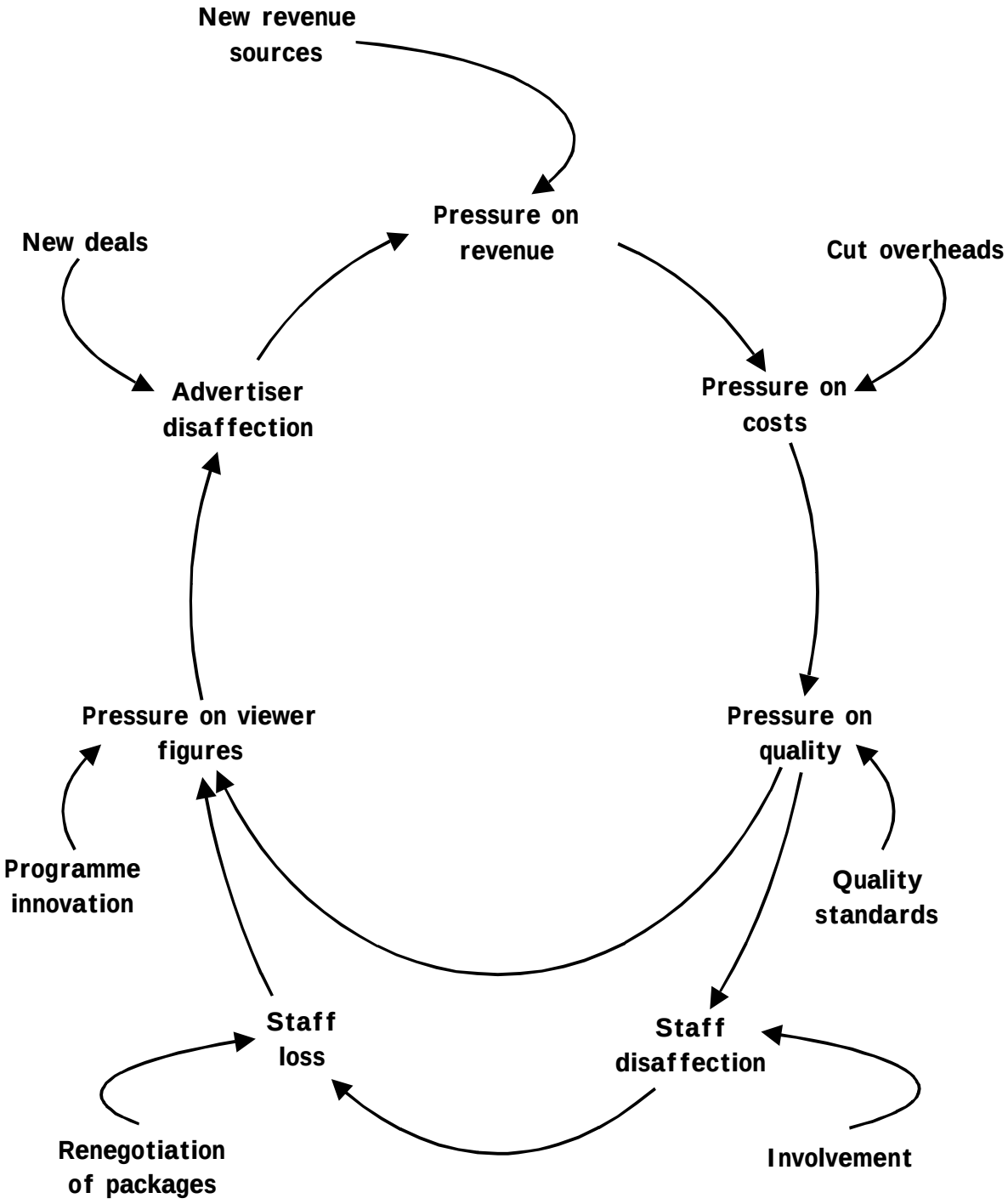


“Mmm, yes, that makes sense.”

“Yes, I see how that hangs together.”

“So,” I continued, “if this diagram makes sense – and it is indeed a vicious circle - why don’t we use it to examine how we can stop things spiralling totally out of control? If this is what could happen, why don’t we each write down the one, or maybe two, actions we personally would take to stop it?”

Once again, in silence, people wrote down what they believed they would do, and I then captured their views on a flip chart: views such as “improve staff morale to stop disaffection” to “negotiate new deals with the advertisers”; from “draw a line in the sand to protect quality standards” to “negotiate new contracts with stars so that they can’t leave”. All very plausible, all very different:-


New revenue sources
Pressure on revenue
New deals
Cut overheads
Advertiser disaffection
Pressure on costs
Pressure on viewer figures
Pressure on quality
Programme innovation
Quality standards
Staff loss
Staff disaffection
Renegotiation of packages
Involvement

And once this diagram had been drawn, the discussion was transformed. People could see that different interventions acted on different parts of the loop, that they had different effects as regards their own consequences (not least their cost implications), that they acted differently over time. Of course, different people were arguing different cases, but this time, the discussion was based on a common understanding of a bigger picture; a realisation that the discussion was amongst people talking not at cross-purposes, but rather under conditions of different emphasis; and, most importantly, a recognition that something had to be agreed.

The meeting turned from random walk, to well-focused debate, to building a firm agreement on some positive actions. And best of all, after the meeting, several people asked more about the diagram, whether or not it was just an accident, and how such diagrams might be used under other circumstances.

At last, the horse had been led to water. And it continued to drink too, for this was just the first of many uses of systems thinking - another, more sophisticated, case study, which happened later, will be found in Chapter 9 of my latest book *Seeing the Forest for the Trees – A manager's guide to applying systems thinking* (Sherwood 2002).

Some thoughts

Although I manufactured the dialogue of that example, the key elements are true: and I have used a similar approach on many occasions. I cannot claim success every time, for there is no guarantee that drawing such a diagram stimulates an interest – but I certainly feel much more comfortable using this approach than trying 'bronco busting' or 'pulling the reins'. Also, I fully appreciate that, from a systems thinking point of view, the causal loop diagrams are trivial. But that's a judgement which we experts can make: from the point of view of the community I was dealing with, the diagrams were revelatory.

The essence of the approach is, of course, stealth. There is no mention of jargon such as 'systems thinking', 'system dynamics', 'causal loop'; the loops themselves do not include any S's or O's, +'s or -'s; there is no attempt to 'sell' dynamic modelling. Rather, the diagram is introduced simply as a device designed to capture the essence of a conversation that is taking place.

And in compiling the diagram, there are a number of 'techniques' that I now use very deliberately, because, in my experience, they work well.

The one I find most helpful is the suggestion 'to stop and think' – in which the discussion pauses, and people are asked to consider a particular issue, and write down their thoughts, personally and in silence. In the example just mentioned, the first instance of this was to get people to think through the consequences of an increasing pressure on costs. After a few minutes (you can easily tell when people are ready, for they stop writing, and look around), you go round the table and invite everyone to explain what they've written down.

If you've never done things this way, I urge you to try it, for it gives many important benefits. Firstly, the pause, and the silence, changes the pace of the meeting – and although I was somewhat scared when I first used this technique, fearing that people would not wish to do it, I soon discovered that people are very willing to 'play the game'.

Secondly, it genuinely gives people a chance to think, something that happens all too rarely in much of management life.

Thirdly, it encourages people to think independently, and to articulate their own thoughts, so that – and this is a fourth benefit – when it's their turn to speak, they actually say what they think, even if it's different from what anyone else has said. This introduces a 'level playing field' of debate, for – in my experience – people almost always say what they have written down, rather than changing what they say to what the boss has just said, or to go along with the crowd. Also – yet another benefit – everyone has to say something, so the quiet people have a chance to say something without being drowned out by the dominant ones, and those who had drifted away are obliged to come back.

And, of course, this process encourages everyone to articulate their own mental models, and to listen to everyone else's too. But without using the jargon of 'mental models'!

Another lesson I have learnt – the hard way – is *never* to draw diagrams with +'s and -'s, or S's and O's, if the audience is not extremely systems literate. I very quickly stopped using +'s and -'s by virtue of the baggage these symbols carry, and the often immediate barrier they create to those uncomfortable with mathematics. I then switched to S's and O's, but discovered that even these 'safe' symbols create all manner of confusion. People are always asking "why is that an O, not an S?", or "isn't that link both an S and an O?" or whatever.

I don't think it's dignified to ignore these types of question, or to respond with a patronising "let's not discuss that right now, trust me, I'm a doctor" style remark. The questions are legitimate, and asked in a spirit of enquiry and learning rather than one of terrorism and disruption. But whenever I try to answer these questions – maybe that's just me again! – I find myself going down all sorts of rabbit holes as I attempt to explain what happens as one thing increases, all other things being equal… Such explanations rarely clarified matters, and usually detracted from the general flow of the conversation. Also, over time, I began to realise that the key role of the S's and O's is to help in diagnosing and distinguishing reinforcing loops and balancing loops – but if such distinctions are not immediately relevant, then diagrams without the S's and the O's are perfectly intelligible, and can act as a focus of attention for a very serious and constructive conversation, as I trust the example I have shown here – and the others I my new book – illustrate (many of the examples in the book are much more sophisticated than the one discussed in this article – but they are all real).

Also, in order to avoid jargon and the need for explanation, I have found that drawing elemental causal loop diagrams is much more accessible to an untrained audience than drawing plumbing diagrams: to draw a plumbing diagram requires you to distinguish between stocks and flows, and so demands than there is an explanation of what a stock is, what a flow is, and, arguably, why they are different and why the distinction is important. For sure, these explanations are not difficult, and most people can understand them. But, in my experience, any element, even the most modest, of 'training' gets in the way of a general meeting, and creates all sorts of psychological barriers as one member of a team suddenly goes into 'teacher' mode.

For the whole essence of my approach is involvement, with very gentle, subtle guidance from within: involving the community who own the problem in a way which does *not* require them to have been trained in any systems thinking or system dynamics, or indeed to have any knowledge of the subject at all. The diagrams are simply quite natural ways of capturing the conversation, and checking that it all makes sense. What could be simpler? And if the diagrams help the conversation, people will often ask for more…

Overall, my experience is that you can't lead an initially unwilling horse to the water of systems thinking and system dynamics without attracting its attention first, and giving it an incentive to move in that direction. All my experience is that this must be done with great subtlety and care, for the horses I have met can be very stubborn, and very prone to indigestion!

Digging deeper

Well, that third approach is the one that I have found most likely to lead to success in introducing systems thinking or system dynamics to a community who has never used these techniques before. The essence of the approach is gentleness, coaxing, and – most importantly – the absence of any implied or explicit threat. So let me now develop this theme, for I believe that the fundamental issue is all about threats.

What threat?

The threat spelled out oh-so-explicitly in many places in the systems literature, and none more so than in the second 1992 issue of that august journal, The McKinsey Quarterly. In a landmark article interviewing Jay Forrester, in its own special box to give it particular emphasis, we read this quotation:-

"System dynamics is a process in which the objective is to help people alter and improve their own mental models. Only by changing mental models will one change decisions."

As you read that, I can sense you nodding and grunting in agreement. Of course. That's exactly what system dynamics - and systems thinking too - are all about! And how well expressed too!

Indeed, that is precisely what systems thinking and system dynamics are all about. And, yes, it is well expressed.

But this statement is also, to my mind, the essence of the problem; the heart of the threat of which I spoke a few paragraphs ago.

What threat? How can such a well-articulated mission statement be a threat! It's wonderful!

To you (and me!), yes, it is wonderful. But to many, it's one hell of a threat. The threat arising from the fact (or, rather, what I perceive as a fact!) that many successful senior people in business, and non-profit organisations too, don't ***want*** to change their mental models, thank you. Nor do they seek any 'help' in doing so. They are happy with their decisions. And they have been pretty successful too - and as they slide back in their luxury chairs, they eye you with the implication "and a darned sight more successful than you, sunshine!".

It is of course a paradox (if not a human tragedy) that those who need to change their mental models (or, indeed, have them changed!) are inevitably those who are not only reluctant to do so, but also most vigorously deny the very need. So any approach by the systems community based on the premise that "I'm here from Systems Head Office to help you" is, I believe, totally doomed to fail. And it usually does.

And so you end up with the destiny of all evangelical missionaries – you end up preaching to the converted. Those who need systems thinking and system dynamics the least, because they intuitively grasp its power, love it and use it; those who need it the most reject it.

Is the 'learning organisation' the right metaphor?

So, what can the poor missionary do, surrounded by unbelievers?

In a word (or rather three words), I don't know – or rather, I don't by any means have all – or even some – of the answers. Part of the purpose of this paper is to put the debate on the table, and – if my premise makes any sense – stimulate discussion.

But I do have two suggestions. One I've already made: to approach the issue by stealth and subtlety, to "provide the hay" (returning to the metaphor I used earlier) rather than to "pull the reins" or (heaven forbid) to attempt "bronco busting".

But my second is to throw a spotlight on one of our own sacred cows, and enquire as to whether or not the language we are using, and the implications of that language, are as effective as we would wish them to be.

The specific sacred cow I have in mind is the phrase the 'learning organisation'. A powerful phrase indeed, capturing many complex concepts, and whose success is evident by the speed with which it entered into common usage. And we, the practitioners, know fully what it means, replete with much subtlety and nuance. But do 'the great unwashed' – the vast majority of people out there who are very happy with their mental models, thank you – have as rich an understanding?

Indeed, what *does* the phrase the 'learning organisation' mean to the average-business-person-at-her-desk? I wonder. It probably means things like 'a willingness to learn new things', 'staying close to the customer', 'keeping an eye on the competition and stealing their successful ideas'.

All good stuff.

But is it the right stuff? And does the phrase "the learning organisation" direct attention to the right place?

I don't think it does.

So, at the great risk of challenging you to "*alter and improve your own mental models*", let me explain.

Premise # 1 – There are no 'green field' sites

My starting point is to assert that, in business and organisational life, solving problems, dealing with complex situations, taking decisions, never, just never, takes place on a 'green field' site. Rather, it is a very muddy brown field indeed, trampled over again and again by people wearing all sorts of heavy boots. We've had business and customer-facing strategies before; we've handled difficult union disputes before; we've developed policies for health care before. Despite the metaphor of a 'clean sheet of paper' – as conventionally used in brainstorming – there is no clean sheet at all.

In the language used by practitioners of systems thinking and system dynamics, this translates into the recognition that **there are always pre-existing mental models**: we never, just never, deal with a situation in which there is no mental model to start with. This is, of course, explicitly recognised in the quotation:

"System dynamics is a process in which the objective is to help people alter and improve their own mental models. Only by changing mental models will one change decisions."

What this quotation does **not** say is "*System dynamics is a process in which the objective is to help people **create** their own mental models"*; rather, the use of the verbs "alter", "improve" and "change", directly acknowledges the pre-existence of mental models - which, maybe not-so-subtly - are implied to be "wrong".

Premise # 2 – Before you can create the new, you have to destroy the old

In one of Edward de Bono's early books – *The Mechanism of Mind* (de Bono 1967) – there is an exercise which I feel is very powerful. Here is a somewhat modified version (see also Sherwood 1998 and Sherwood 2001):-

Take a sheet of paper, or (better), stiff card, and cut out four shapes:

- shape A - a square, about 3 cm by 3 cm
- shape B - a small rectangle, 3 cm by 6 cm
- shape C - a large rectangle, 3 cm by 9 cm
- shape D - an L-shape, formed from a large square (6 cm x 6 cm), from which a smaller square (3 cm by 3 cm) has been removed from one corner.

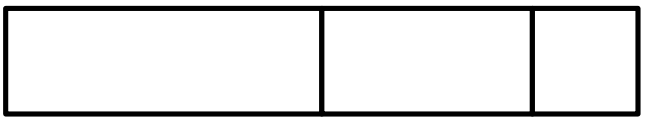
Then say to a colleague, "I have a number of shapes, and what I would like you to do is to combine the shapes to form the simplest possible overall shape: here's the first one."

As you say "Here's the first one", place shape C, the long rectangle, on the table in front of your colleague. Then give your colleague shape B (the small rectangle), and after the shapes have been arranged together (don't interfere with this - let your colleague do whatever he or she wishes), hand over shape A, the square. Finally, give your colleague shape D, the L-shape.

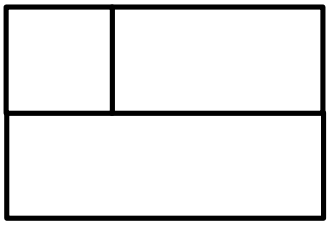
Now ask for a second colleague, and say the same thing, but this time, give shape D, the L-shape, first. Then shape A (the square), then B (the small rectangle), then shape C (the large rectangle).

What usually happens is this.

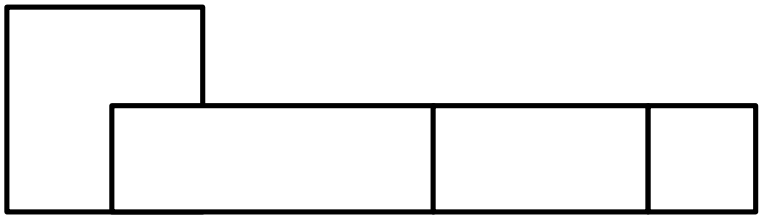
Typically, the first person, given shapes C (long rectangle), B (short rectangle) and A (square), arrives in one of two positions:-



or



The arrival of the L-shaped piece causes a problem, since it is neither a natural extension of the ‘wall’, consistent with the upper shape, nor a ‘brick’ easily fitted into the second pattern. Typically, there is some hesitation, as the person tries a few alternative positions, usually settling for either:-



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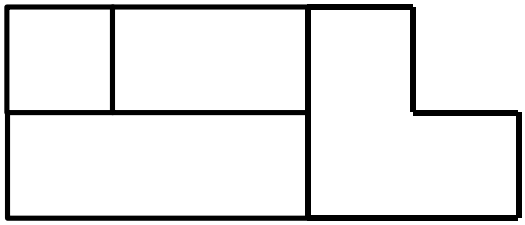
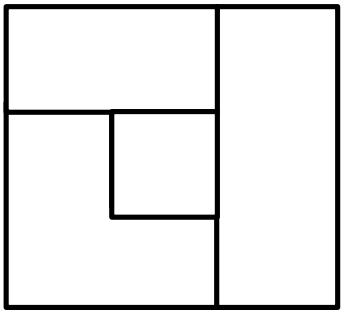


There are some other possibilities, but these are the most frequent occurrences.

The second person invariably ends up with a square:-



The pieces given to both people were the same, as was the instruction - to form the simplest possible overall shape. How come we ended up in two different places?

The ***only*** difference between what happened in each case was the sequence in which the pieces were offered. In the first instance, the sequence was long rectangle, short rectangle, square, leading either to a 'wall' or a 'brick'. When the final L-shape comes along, it doesn't easily fit, and so it's tacked onto the end.

In the second, the L-shape came first, and then the square, which is almost invariably placed in the 'hole' of the L to complete a larger square, allowing the small rectangle to fit alongside, and then finally the large rectangle - everything slotting neatly into place in sequence.

In the first case, the sequence in which the pieces are presented leads the participant to think in terms of either 'walls', or 'bricks'. And when they are given the L-shaped piece, they vainly try to fit it in as best they can.

Having built a 'wall' or a 'brick' with the first three pieces, and then being presented with the L-shaped piece, there is but one and only one way in which the L-shape can be made to fit most neatly. But this way ***requires*** that the existing pattern of either the 'wall' or the 'brick' is ***taken apart, and broken into its component pieces***. Only then can the four parts be recombined into a new pattern - the square.

Very rarely, this actually happens: on being given the L-shaped piece, about one person in a hundred people breaks the existing pattern apart, plays around a little, and then discovers the square. But on 99 times out of 100, this just doesn't happen.

Why not?

Well, there are several reasons.

Firstly, many people feel it is not in the 'rules' to break the pattern apart. What rules? The instructions simply say "what I would like you to do is to combine the shapes to form the simplest possible overall shape": they make no reference whatsoever to whether or not the pieces can be rearranged. But the fact that a pattern has been formed by the first three pieces often leads people to create their own box, a box from which they find it very difficult to escape.

Secondly, there is love. The 'wall' or the 'brick' is *mine* - I created it, I made it happen. How dare anyone challenge it? How dare anyone break it apart?

Thirdly, there is fear. People might spot that they are not prevented from breaking the existing pattern, but unless they have very powerful perceptive skills, they can't immediately see that an alternative is a nice, regular square. So, in breaking the existing pattern apart, they don't know that there is a better pattern out there to find. Better to play safe and leave things be.

And fourthly there is pressure: we don't have time to monkey around with all the bits, especially if the boss comes in and asks what the hell we're doing. Better to play safe and leave things be.

But unless the existing pattern is pulled apart, given the new L-shaped piece, it is simply ***impossible*** to discover the new pattern.

This exercise is, of course, a metaphor for the process of changing a mental model. As we gain experience, we form complex patterns of constructs in our minds – patterns conditioned by the knowledge, experience and learning we make throughout our lives. At any stage of our personal development, this knowledge, learning and experience constitutes our portfolio of mental models, represented in this exercise by the "wall" or the "brick".

And because we are, by and large, successful (or rather, because the clients we like to deal with certainly are successful!), these pre-existing mental models have great validity. They work. All my experience tells me so.

And then along comes another piece of information, another experience, another construct. Now, when this happens, the piece may readily fit alongside the existing construct, just as all the bits fitted nicely together in the second exercise, and as indeed the first three bits fitted nicely together in the first exercise. Under these circumstances, there is no problem – I can readily integrate the new experience within the pre-existing framework, just as someone who knows how to play the clarinet can usually get acceptable noises from a saxophone; just as a manager trained in marketing can be very comfortable with the more far-reaching discipline of strategy.

But what if the new piece of information, the new experience, the new construct does ***not*** readily fit within the pre-existing framework? Under these much more testing conditions, the most likely result is rejection: the new information is simply expelled or ignored. Now, to an outsider (like the systems consultant), this may be a 'bad' or 'stupid' act, but from the standpoint of the person on the inside, it makes perfectly good sense.

For the alternative to expulsion is very difficult. As the puzzle made abundantly clear, **before the new piece can be integrated, the old pattern needs to be broken apart.**

Before you can create the new, you have to destroy the old.

Premise # 3 – Unlearning is very difficult...

This of course leads to the central point: in any matters of any significance, where the pre-existing mental models are well-formulated, and the basis of success, then an absolutely necessary condition for the creation of a new mental model is the prior destruction of the existing one. Or, putting exactly the same concept into slightly different words: except for relatively trivial circumstances, before you can learn, you have to unlearn.

And there is no doubt that unlearning the familiar, the comfortable, the successful is very difficult indeed. Because I am in love with what I know, what I built, what is already mine. Because I fear the uncertainty associated with the new. Because that process of transition, in which the component parts of my existing, safe mental model are prised apart – just as in the puzzle – takes me from a well-ordered state, where everything makes good sense, through a highly disordered, muddled, uncomfortable state, before the new, better pattern emerges. If it does.

Yes, unlearning is very difficult.

Premise # 4 - ...but unlearning is absolutely necessary

Indeed it is. As the puzzle makes so graphically clear, tearing apart the old is a necessary prerequisite for the discovery of the new. Exactly the same point is made by Arthur Koestler in his masterful work *The Act of Creation* (Koestler 1964):

"The creative act is not an act of creation in the sense of the Old Testament. It does not create something out of nothing; it uncovers, selects, re-shuffles, combines, synthesises already existing facts, ideas, faculties, skills. The more familiar the parts, the more striking the new whole."

The acts of selection, re-shuffling, combining and synthesising of which "Koestler's Law" so eloquently speaks are precisely the processes by which existing mental models are unpicked, by which the component pieces of my mental models are mingled with yours (if we're listening to each other in a true spirit of dialogue), by which we together explore hitherto uncharted mental territory. By which we unlearn.

Premise # 4 – The systems approach hurts

In my experience, everyone loves learning – especially when I can integrate the new learning into my existing frameworks, or branch out into a new framework altogether, whilst leaving my existing frameworks alone. So the orchestral clarinettist plays tenor sax in a jazz combo; so the busy executive takes up windsurfing. But when the new learning is a direct challenge to the old; when unlearning the familiar, the comfortable and the successful is a necessary condition to allow for the learning of the new, then this is much, much more difficult.

But it is here – almost by definition – that the interesting, valuable and effective applications of systems thinking and system dynamics modelling reside. Indeed these great words:

"System dynamics is a process in which the objective is to help people alter and improve their own mental models. Only by changing mental models will one change decisions."

say exactly that.

So, quite deliberately, systems practitioners place themselves in the most difficult of all possible positions – forcing incumbent, successful managers to unlearn the familiar, the comfortable, the successful.

No wonder so many people don't know, and probably don't want to know, about the systems approach; no wonder that we can all end up 'preaching to the converted'. The systems approach hurts. And no-one likes to be hurt.

Towards the "unlearning organisation"

So, what can we do?

I wonder if one approach is to recognise, quite explicitly, that the evanagelism of ***"the objective is to help people alter and improve their own mental models"*** can be seen as a profound threat to those who do not wish to have their mental models altered, still less improved, by you, thanks. And to recognise, quite explicitly again, that this (indeed worthy, but often unpalatable) objective requires two steps: before the new, altered and improved mental model can be formulated, the existing, comfortable, successful, safe one has to be unpicked, with care. To recognise, explicitly, that before we can learn, we have to unlearn. And to recognise, explicitly, that unlearning the old is vastly, hugely, colossally harder than learning the new.

By switching attention away from 'learning' to 'unlearning'; by emphasising the features not of the 'learning organisation' but the 'unlearning organisation'.

What does an 'unlearning' organisation look like? Well, I don't pretend to have all the answers, and much of the purpose of this paper is to stimulate the debate. Nonetheless, let me get the debate going by offering some suggestions.

A fundamental characteristic of the 'unlearning organisation' is the explicit recognition that unlearning is an 'OK' thing to do – to be willing to unlearn is not an admission of failure, weakness or incompetence; to be willing to unlearn is not to state that everything you have done in the past has been wrong. Rather, it is a recognition that the future is different from the past, and that the way we did things before, and the way we do things today, need not necessarily be the way that things should best be done in the future.

Some other characteristics of the 'unlearning organisation' are shown in the box (see also Sherwood 2000):

Twelve key features of the unlearning organisation

1. The day-job doesn't get in the way

Unlearning organisations make time for thinking, exploration, innovation. They don't let the pressures of the day-job stop this.

2. "If it ain't broke, don't fix it" is *not* "the way we do things around here"

Unlearning organisations don't wait for things to break before they fix them. They are always searching for better ways of doing things, even if there is no explicit 'problem' to solve.

3. The only rule is "rules are for breaking"

Unlearning organisations recognise that rules, policies, procedures, processes, are artefacts of the time they were originated. All are constantly under review, and those that remain fit-for-purpose are retained, those that have passed their sell-by date are ditched.

4. Negligence is distinguished from learning

Unlearning organisations know that 'failure' is a very broad term, and embraces many things. In particular, they distinguish between 'negligence' (the deliberate departure from an agreed policy) and 'learning' (what happens when an outcome differs from expectations). They do not condone the former; nor do they penalise the latter.

5. They listen

To each other, to the outside world. Actively. Bosses do not finish the sentences of their subordinates; peers use their ears more than their mouths.

6. They share

Resources, information, people, risk. They operate in highly connected networks rather than hierarchical silos; nothing is 'mine', for everything is 'ours'; everyone is comfortable playing whatever roles are fit-for-purpose at the time.

7. They say 'yes' more than they say 'no'

Go to a meeting. Take a blank sheet of paper, draw a vertical line down the middle. Label the left-hand column 'yes'; the right-hand column 'no'. Each time you hear the word 'yes', or an equivalent positive remark, place a tick in the left-hand column; likewise for 'no' and it's surrogates. In an unlearning organisation, you will have far more ticks on the left than the right.

8. They don't rush to judge

Unlearning organisations know when to evaluate ideas, and do this only when there is a full and well-balanced view. They do not shoot from the hip, or jerk from the knee: they think from the head.

9. They have a wise approach to managing risk

Unlearning organisations fully recognise that innovation is all about managing risk. They also know full well that, in today's business climate – and especially tomorrow's – to maintain the status quo, though comfortable and familiar, is likely to be more risky than stepping wisely into the unknown. They do not expect every innovation to succeed, nor do they place any foolhardy bets.

10. Their performance measures support innovation, rather than discourage it

Unlearning organisations have enhanced their portfolio of performance measures to ensure that they support, rather than inhibit, innovation. Even to the (unusual) extent of measuring inputs (such as hours spent on idea generation) rather than outputs (number of ideas put into the suggestion box).

11. They are very good at managing both the line *and* projects

"Did you hear about Pat?"
"No, I don't think so. What's going on?"
"He's been assigned to a 'special' project."
"Well, he's on his way out then."

That is a conversation you will not hear in an unlearning organisation. Managing the line and managing projects exist easily side-by-side; being assigned to an innovation project is a symbol of regard; and risk-taking is rewarded.

12. They regard innovation as a core business process in its own right

Unlearning organisations manage innovation, in all its aspects, as a core business process, indeed as *the* core business process. For they know that innovation - the ability to solve problems wherever they might arise, to be able to grasp opportunities however fleeting, to be confident in generating stunning new ideas again and again and again and again, and to deliver them too – is truly *the* ultimate competitive advantage.

Experts, of course, will read through that list, nodding and grunting with familiarity – for many of these points are characteristics of what experts recognise as the learning organisation.

So what's the difference? Am I just playing a semantic game?

I don't think so. I think there is a difference, and an important one too. A difference in emphasis. A difference in method. And a difference in branding too.

To me, the difference in emphasis is critical. The use of the term 'the unlearning organisation' throws the spotlight directly onto what to me is the mission-critical area – the need to unlearn the old, before you can learn the new. The awareness of the need to unlearn, to escape from the trap of our previous knowledge, learning and experience, is, I believe, the single most important behavioural characteristic that experienced, knowledgeable and successful people can demonstrate. And so the emphasis is important, directing attention into the key area, rather than elsewhere.

The methods are different too. Yes, active listening and dialogue are important, but the act of unlearning can be supported very powerfully by appropriately crafted tools. There are in fact many tools that can help us unlearn, and all share the common characteristic identified in Koestler's Law of the need to disaggregate prior learning, knowledge and experience into its component parts so as to allow for selection, shuffling, and the discovery of a new pattern. Let me mention two, one highly familiar, one perhaps less so.

The first tool is systems thinking (as opposed to system dynamics), as represented by causal loop diagrams (as opposed to plumbing diagrams). Causal loop diagrams, with their chains of causality, are explicit manifestations of Koestler's Law, for each link represents the originator's perception of the underlying component parts of the complex, bundled structure represented by the diagram as a whole. Drawing causal loop diagrams therefore sets the scene for unbundling the complexity, for accepting that there might be alternative representations of the same external reality, for the discovery of new patterns, for unlearning.

In my view, as I have already noted, causal loop diagrams are much easier to use with a group of people who have never experienced the systems approach than are plumbing diagrams; also, causal loop diagrams are intrinsically more experimental than plumbing diagrams – plumbing diagrams can easily become statements of 'the answer' rather than readily-changed 'vehicles for experimentation'.

The second tool is probably less familiar – it is my own tool called ***InnovAction!***^{TM} (Sherwood 2001) Whereas causal loop diagrams are very powerful in helping people to unlearn in contexts where the focus of attention is the understanding of chains of causality, ***InnovAction!***^{TM} is a more generalised tool which can be used to help people unlearn whenever they need to create a fresh idea.

The essence of ***InnovAction!***^{TM} is the explicit recognition of what the fundamental business truth I expressed in Premise #1: that business and organisational life never takes place on a green field site. In my experience, whenever and wherever new ideas are needed, the site is very muddy indeed – and very familiar too, for it is heavily trampled with our hiking boots of knowledge, learning and experience. We need to design a new product, but we have designed products before; we need to develop a new process, but we have developed processes before; we need a new, breakthrough strategy – but we already have the one we developed last year.

The fact that all our building sites are very muddy rather than green-field has a very important implication for one of the most widely-used creativity techniques – brainstorming. We've all done it, and many of us are very good at it. We work hard to create the right atmosphere, and it's fun. And we get a nice, white, pristine, blank sheet of flip-chart paper on which to start the process.

But to me, there's something wrong here. The metaphor of the blank sheet of paper. It just doesn't fit. It's not a blank-sheet-of-paper situation, for our starting point is not a void – rather, the starting point is very full indeed, full of my learning, knowledge and experience. So, rather than starting with a blank sheet of paper, ***InnovAction!***^{TM} starts by inviting people to articulate that learning, knowledge and experience, not in the forms of chains of causality as in causal loop diagrams, but as long lists.

So, as a simple example, suppose you are a games manufacturer and want to invent a new game. You could do this by brainstorming, and I'm sure you will get some ideas accordingly. But the alternative method advocated by ***InnovAction!***^{TM} is not to start with that blank sheet of paper, but to start with a familiar construct – say, the game of chess – and to define, as a series of bullet points, its characteristics: characteristics such as (to list only four):-

- it is played by two players
- it is played on a board
- players take turns to move
- only one piece can be on any one square at any one time.

The process of compiling a list of features-of-the-world-as-we-see-it-now is in itself illuminating, for different people always compile different lists, albeit with some features in common. The differences in the lists always spark questions such as "tell me more about why you see the world that way", so inviting true dialogue; and the differences in the lists also inevitably provoke the thought "Yes! But I'd never noticed that!". Indeed, this thought might have just gone through your own mind as your read the four bullet points I listed about chess. The first three points are very obvious, but the fourth is much less so. But it is true, and is the basis of the rule of capture – if you wish one of your pieces to occupy a square currently occupied by one of mine, my piece is removed from the board, and replaced by yours; if I wish to occupy a square already held by one of mine, I cannot do so until the square has been vacated.

The process of listing the features-of-the-world-as-we-see-it-now is, in Koestler's terms, a process of identifying all the component elements of the complex, bundled concept we call chess. And once they have been separately identified, they can be selected, shuffled, rearranged, to form a new pattern – the wonderful new pattern of a new idea.

And the easiest way of doing this is to ask, of each feature individually, "How might this be different?".

So, if there weren't two players, how many might there be? Well, there might be four, playing in two teams, like in tennis doubles, taking one move at a time, alternately. Or perhaps the game might be more like tag wrestling, in which the first two opponents play several moves (say, five), and then hand over to their partners. And if the partners have not been allowed to observe the play, they have to take the position over, sight unseen. Interesting...

And if two players *are* allowed to occupy the same square...then maybe there is a 'magic' square on the board (mmm...just like on a *Scrabble* board), and if the king and queen land on it, maybe they can produce a prince (a knight maybe?)...or even a princess (now that piece doesn't exist...but a princess is a queen-in-the-making, so what about having a new piece that can move in any direction – like a queen – but only for two squares, for five moves, until she grows up...).

You can see how the process works. By encouraging the disaggregation of a complex, learnt structure (in this case, chess) into its component parts – by encouraging unlearning – the stage is then set for a new process of learning, which, in this example, is demonstrated by the discovery of a new idea.

Chess, literally, is a game – but the process isn't. I have used it countless times to address real, complex, business problems, as documented in the case studies in my books (see Sherwood 1998, Sherwood 2001, Sherwood 2002), and as you too can experience in the workshop [later today].

The key experience, however, is ***not*** that of learning the new, or the discovery of a new idea. ***The key experience is in unlearning***, and being willing to recognise that many of the 'rules' we follow in our business and organisational lives are, at root, as arbitrary as the rules of chess. And by challenging these 'rules' we can then discover all sorts of wonderful new ideas, from new products, to new processes, to breakthrough strategies.

But you can't discover the new until you are willing to unlearn the old. And that's why I think the 'unlearning organisation' is so important.

References

de Bono, Edward. 1971. *The Mechanism of Mind*. London: Penguin.

Koestler, Arthur. 1964. *The Act of Creation*. London: Hutchinson & Co.

Senge, Peter. 1990. *The Fifth Discipline*. New York: Doubleday.

Sherwood, Dennis. 1998. *Unlock Your Mind*. Basingstoke: Gower Publishing.

Sherwood, Dennis. 2000. The Unlearning Organisation. *Business Strategy Review* 11-3: 31-40.

Sherwood, Dennis. 2001. *Smart Things to Know about Innovation and Creativity*. Oxford: Capstone Publishing.

Sherwood, Dennis. 2002. *Seeing the Forest for the Trees – A manager's guide to applying systems thinking*. London: Nicholas Brealey Publishing.

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