

The Falcondale Collection

Stafford Beer

Initiates an Audience into the World of
Systems and Managerial Cybernetics

Session 6

The Horizontal and Vertical Variety Balance

Lets start.

We have got, as you see :-

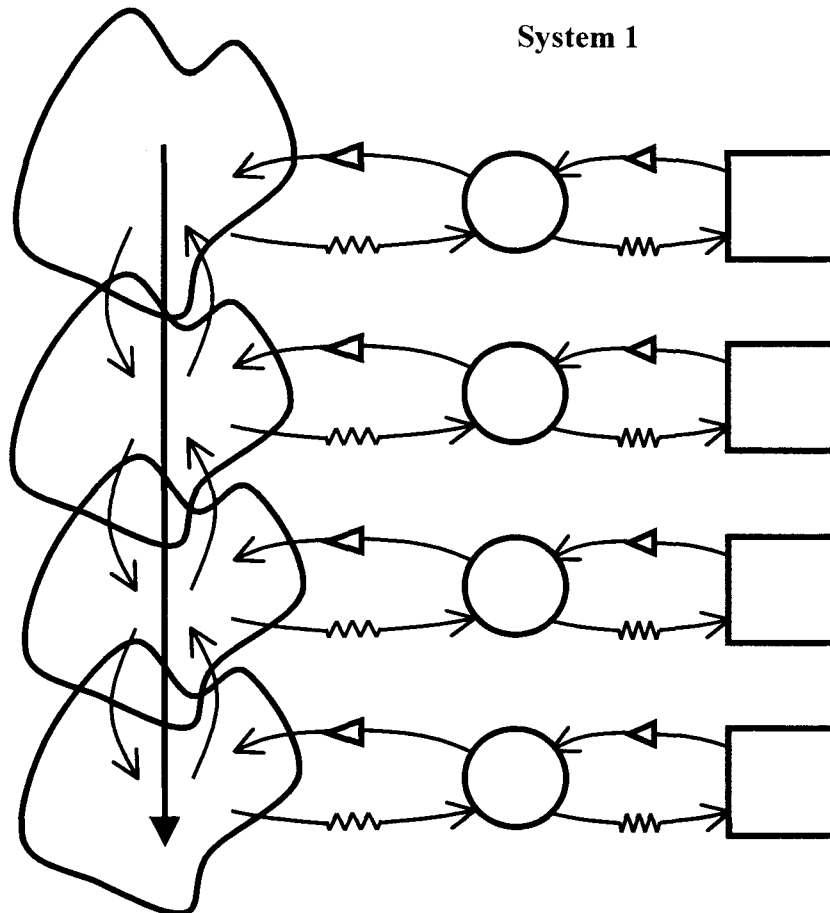


Figure 1

Environmental Interaction

We thought that we would make the mirror opaque because you can't see very clearly and what we had was this. Right. Now we put an amplifier on there and there and an attenuator there and there. I should have left gaps but I didn't.

That is an exemplar of System One. In other words going back to our defence model it's the army inside defence, right.

Now, there are going to be several of them, aren't there. Otherwise what are we playing at, you know. So, what I want you to consider now please, thank you, is some more of these.

I'll just put in four of them. Oh dear. I have made a bit of a mess on that, that's life. So, this is a sketch now rather than a formal diagram. But you have got the idea.

What I wish you to consider next is.

So, we consider how that works across there for each element of system one. That is the whole system one. It's got all the elements in it, in this case there are four. There may be more or may be less, and what we have to consider now is what is the connection between those guys. Now, there is likely to be a connection isn't there, because they are all part of the same enterprise the same organisation however we are defining this. But, what is that connection?

Now, one is already up there. Can you see what it is?

The environments.

The environments.

I believe that it is very very difficult, not to share the environments, if you are in the same organisation. [see figure 1] Now, please accept, the obvious convention here is. I've only got two dimension I haven't got three. To connect this to that you don't have to go through the other two, you with me. So this connection and this connection. And this connection includes this connection to that which I have not shown. O.K. So there's a very strong environmental interaction.

So, let's take examples of that. You have an enterprise that's looking at the whole of Canada, shall we say. It leaps to mind. And you have something going on in all the whole ten provinces of Canada. Now, when you draw those this is effectively a map and you are going to have a clear line between two provinces. But, from a cybernetic stand point that isn't very realistic it's okay from a geographic and a legalistic stand point but the people around that boundary are not going to recognise that they are different. You don't straddle the line and say, 'half of me is in Saskatchewan and half of me is in Manitoba. There are other reasons why that's going to be connected. We might all say we are Canadians. Now, let's get to the commercial applications. You can have Sales Areas which demarcate. But you see, if your Company gets a name for doing something naughty or something especially good or whatever, it's going to rumble over. So what I am saying to you is, if you look at those interconnections in the vertical, we have so far looked at the horizontal, what you are going to find out is that variety is being absorbed. Because, you cannot have the reputation of being Rolls Royce in this bit of the world and of being a rubbishy Dagenham dustbin in another part of the world, because it is highly unlikely. Either your a quality car or your not a quality car, and if reputation is going to slop over. If you are MacDonal'd's then there are things about MacDonal'd's that are uniform and that's the whole idea. So this is absorbing variety in the vertical domain. I think that's quite interesting.

I'm asking the question. 'How does this total organisation cohere, given that we have separated the army, the navy and the airforce, we have separated primary, tertiary sorry secondary, and tertiary education in the education system?' We have separated General Practice and hospitals and clinics, whatever in the health system. But they are all part of it, and in what sense are the part of it is the next thing to investigate. Now, I have started by saying, 'well, their environments absorb each other to a very considerable extent.' I now put to you the question. 'What, if anything, is the interaction between the circles?'

Common goals

Common practices as well.

Sorry I didn't get that. Common practices.

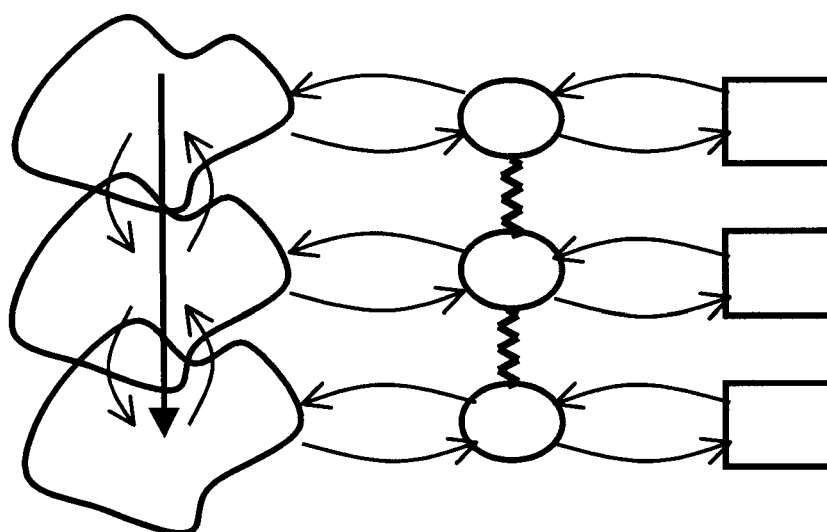
Are any of them linked?

Well that's the question I am asking you.

Are the environments having an overlap, do any of the circles overlap?

That's what I am asking you and that's the reason you're having a problem here and the reason your having problems is because it depends, it depends.

This is what I ludicrously call the squiggly line connection. It's got stuck so everyone calls it the squiggly line because I put that in there and it's a squiggly line. And, we really do have to ask what the coherence might be in any given situation.



Squiggly Line

I mentioned Steel to you and that's an example you can readily follow. If the top one in the circle is taking in Iron Ore, shoving it into a blast furnace and producing molten iron. And then it travels down the squiggly line and it gets into a steel furnace. And then it's reduced and the carbons got out the phosphorous and the sulphur got out and you've now got steel. And then that is made into ingots, in the next one, then the ingots are squashed and become all sorts of products lower down the line really slabs, strip, you name it.

That means the squiggly line connection is very strong isn't it because it's causal, forgive the word it's causal. Because nothing happens until it's fed down. Now if you were to think of Unilever on the other hand. Unilever is effectively a holding company and it makes all sorts of things. And it used to have Macfisheries, I think that's long since gone. You don't remember it? Which were fish shops but that has nothing to do with margarine. So, these enterprises are quite separate. And, they are linked by the fact that they are competing for capital, for instance from the parent company. And that's pretty minimal, and they are competing to use a word popular in Unilever, they are competing for Crown Princes. These are the up and coming flyers who are being moved around and given ever increasingly important jobs and are going to end up on the Board you know. That's the minimum squiggly line the maximum is the other one.

So, now we have got to the squares. These are the management units.

What connects them, if anything?

Board strategy.

Indeed.

Common management practices.

Yes.

Certain amount coming from the Board of Directors.

Yes. Well that's going to come up the top you see I am creeping up on this, what I call the meta-system. Which is managing all of this. At the moment we are sticking at system one.

I better warn you there are five systems. So we have a long way to go.

System One is defined, please remember, as what it is we are supposed to be doing, and that is not going to match your organisation chart. Because, you're going to have huge departments within the organisational chart which are supported and have absolutely nothing to do with why you're there. So, the janitors department in the school, that is supposed to be keeping the school going is an accident, it's nothing to do with the purpose of the school.

What are the System One's of the school folks?

Education.

Teachers.

Classrooms.

Children.

Pupils.

That's the purpose of the whole damn thing. What is the System One? somebody has already said it.

Pupils.

Classes.

Don't forget you only one set at a time so if your thinking of a school you are not going to hit the pupils

Classes.

Pardon.

Classes.

Classes, obviously.

These are going to be classes. The next recursion you take a class and you're now looking at the teacher and the students. At this level. I want you to get used to this recursive way of looking at things. Let's stick to the school for a minute. These are classes, the management of each class is the form teacher I suppose.

What is the coherence between the square boxes?

Common aim.

Common aim, someone has said something like that already Well, I want to distinguish two different things and we know something is going to be uptop here. So this blue line and this red line are going to be the two things I want to talk about. Now, the red line, lets pick that

because of the colour its sort of alarming colour. The idea about this red line, is that there is some kind of statutory obligation. If you are running a company you must obey the Companies Act, and if you don't you see right through the organisation all the pieces of the organisation. If the separate companies somebody is trading without enough money, If, say they are separate company's in a consortium of companies and one of them runs out of money it's disobeying the red line.

So you've got legal restrictions and you must have equally strong, let's call them ethical constraints being imposed by the company being what it is. They say we're not going to play that game, we don't approve of it.

For instance when I was Development Director of I.P.C., I took over a company and discovered it was a rather large company, and I discovered that hidden in it was a group that sold encyclopaedias, by banging on peoples doors, and forcing housewives to buy things they really didn't want. So we invoked this ethical line which nothing to do with the law. It was a perfectly legitimate company, but we didn't like it, so we got rid of it. We sold it.

So that is to impose legal and ethical requirements and that's very strong stuff. So, how much variety do you want to use up like that?

You see, if you say too much.

You can't get anything done.

You can't get anything done. Well expressed.

We are running into a very interesting phenomenon here which has to do to be very abstract about it. I am not making any signs here warding off the devil or anything. We have the vertical and the horizontal all over the place, vying with each other because this one generating a lot of variety doing its thing and this one is saying just a minute, don't do that, we don't like it or that's illegal. So that is the red line.

Now, I really want you to think about this. Because it is in my book it is exactly what distinguishes one kind of organisation from another kind. Let us suppose that the group of us in this room decided to rob a bank. Now we're already split into groups. You go and make a bomb.

Right.

You look after the transportation. We have to have the cars arriving at the right time and we have to get the hell out of there at the right time and so there has to be meticulous planning, otherwise we're all in jail together.

What are you going to do? What's your group going to do?
Spend the money?

Launder the money?

Yes well launder the money is a good one. When you've got the money what the devil are you going to do with a bunch of bullion. So, all that's got to be attended to and I am sure you can find a job here.

Planning a way in?

Yes well there has got to be a lot of investigation, tunnels dug, etc.

So there we are . So, you four groups are now these four groups. And we've all agreed that this is our enterprise. Now, how much variety do you expect to have left in your square at the end of that.

You have got to run your group. You three are a group and you are in charge, Karen. How much variety have you got, given the rest of the thing?.

Not much.

Bugger all. Yes?. You've solved it. You have all solved it. Because it's no point in having a marvellous operation if the darn cars don't come. You've let the show down, everyone is in jail.

The whole thing is cemented together by the very nature of the beast - this very low variety for each of these things.

Now take another example. Here we are a group, a very nice set of people. We decide to institute a society for loving one another.

You're concerned about kids, you - geriatrics. God knows what you're concerned about. I dread to think. Every sub group is going to express its notion of what it is to love other people. And now what is restricting your variety?

Nothing.

Yes there is I think. If any one of you that is caught hating someone you're out. And that's the limit.

Now what an extraordinary difference. Now people often say to me Stafford, for Gods sake

every organisation is different. How can you possibly have a general theory, which I claim to have? Well now we're getting near it aren't we? Because you can easily depict it like this. Now, what exactly is the difference, in those two examples?
Red line.

The size of the channels isn't it.

Yes, lets have a more general.....

What is the governing principle?

The constraints that you have to work within.

Yes that's true but why?

The common purpose?

Purpose. That's exactly the word I want. Thanks very much Lee. It's the purpose that determines the degree of restriction. Now that is very interesting because of course purpose of all these subjective things that we talk about in this system is about the most subjective of all. Because the purposes of the individuals who make up IBM are probably as different as chalk and cheese, some are in there to get a free ride, some are in there to further their careers etc., etc., And what the Company's purpose is another matter altogether and of course if you detect in the Company that somebody is doing something personal to them, and doesn't contribute to what is supposed to be the corporate purpose they are going to be slung out, aren't they?

So, this idea of purpose is absolutely governing this interchange of variety, and I find that totally fascinating and a big secret actually, in trying to analyse what the devil is going on in any given situation. If you are a fire engine and you've got to get there, everything else goes by the board. All your variety is going to, going to be consumed.

If you are Amnesty - it's a different thing.

We did mention Amnesty before. Millions of ways of trying to deal with the problems that Amnesty faces and everybody's solution is going to be different. And all acceptable, providing they don't involve being nasty. You see after all that's the purpose. So purpose is crucial

Is the blue line purpose.

Oh, no.

I'm subsuming everything in this.

The purpose is going to be reflected in all the vertical lines we are putting up here. So far we have got the environment. Now, the purpose is going to be reflected there, because if you are going to be Amnesty International then you're going to want all the environments to reflect this well intentioned thing, and especially, for instance, they have got to have the reputation for being honest. The way to attack a thing like Amnesty is to say Oh. bunch of... you cook the evidence. And once that has set in as a reputation, you've had it, all over the world, not just where it happens.

The squiggly line connection also reflects the purpose. Because, well doesn't it, you know. If you've got this strong connection like in the steel works, or a weak connection like the conglomerate, clearly it's reflected. And we come to the red line. The red line is the one that has a 'fiat' on it, It's the legal and ethical stop point. And that clearly is going to reflect the purpose, obviously. Now I haven't said what the blue line is.

Maybe I just missed it.

I haven't said it yet.

Let me say first of all, that every line on my diagram is in actually a loop. Takes too long to put them all in and then you can't see. Now the blue line; the red line comes down and says 'don't do this' and then you've got to go back and say 'I'm not doing it'. Then you have to prove that, and that's actually a loop.

So it is in the steel works, if you've sending this iron down the chain you'll have to have a thing coming back saying 'yes we've got it' and 'yes it's all working'. Now the blue line is what I call the resource bargain. I believe that that is the major function of management in the vertical. You see, what you are saying to the individual bit of system one is - 'what you need?'. You are part of our show. What do you actually need. You say 'Well I've got this budget and I'm planning to do this, this, and this'. So what you are saying is. 'Will you fund me to this extent?' The resource bargain will say 'Yes I will fund you. I am higher up than you, are, I will fund you but you will have to come back on the return loop and constantly show me that you are spending the money correctly and it's all working and we are getting the payoff and so on'. So that is why I call it the resource bargain. You notice this is very different from the concept of management that says 'you are part of our show and this is what you are going to do, get on with it, or you're out'.

It is a very much more liberal and sophisticated thing which says well what can you take on and if it's not good enough. I'm entitled to say to you is that the best you can do? And you hype it up.

There is a homeostatic point here where the Senior Management agrees with the System One management, that this is the deal. Now under a self vetoing homeostat you shouldn't be

constantly having to penetrate this stuff and ask all these damned fool questions. You want to set that up so that you just know on a self vetoing homeostatic basis that things are okay. Why should you go poking around down there.

I go in at the top, which I haven't drawn in yet,.....Because I won't go in anywhere else. So I'm talking to the president of the company, or the president of the bank or whatever. Now this guy says 'please understand Professor that we are all very liberal round here and we've all been on the courses and we know we shouldn't be bullying people. So we've got all these things in place'. And very often the Directors of a company will say to me, rather sadly. 'Cor, it's not like the old days you know old chap. Not quite sure why I'm here. I'm here as an advisor really and nobody ever asks my advice, I think I might as well go home.' So this is the de-naturing of the old model of 'Do this and he doeth it'.

Now that's what they tell me. I then go and visit these branches or these divisions or whatever they are. What do I find? I find everybody with copies of the Times looking for a new job. So I say to them, 'what's up?'. They say, 'Oh God, this place is dreadful, you can't get a new biro without a triple application, terrible place you know'. This is real.

He's laughing because he seems to have lived all these incarnations that I keep talking about. Poor Glen, you need a better job!.

What I'm trying to point out to you is that these are perceptions of precisely the same thing. There is only actually one company operating out there and what we mean by reality we were asking yesterday. The point is that there is only one reality, whatever it means, and here are the people at the top see it this way and here are the people this way, see it quite differently. So what is going on?

Perception is obviously very different. But what it means is of course that people are using up each others varieties in ways which nobody suspects.

Now I'll try and make that concrete for you.

I was in a firm in the North of England here which had this belief at the top that it was very liberal and where all the branches were looking for jobs. So I tried to find out why this different perception could possibly exist. I discovered the following.

The Financial Director, who was the nicest bloke you could wish to meet, sweetie pie, trying to help, had issued a thing this very thick directive. Telling people what to do you see. At least that's what they thought. He thought it was a hand-book of advice and comfort and so on. They called it The Bible. They actually called it The Bible. Oh God, you can't do that it's probably in The Bible somewhere. They felt totally victimised by this document, which was supposed, in sweetie pies, self image to be nice help. What I did was, I took The Bible and I tore it up

literally. I tore all the pages out and sorted it, I sorted it out to the sub-systems. I'm telling this story too early in a sense, as there are five of them, and we have only reached the first. I sorted it out between the five sub-systems because what I'm trying to tell you, never mind the others is that the only one that matters is the red line. Now, the Bible came down to about five pages. I printed those on red paper. I said to the Financial Director, 'Publish those as the rules. Publish the rest in four other different colours, saying that this is meant to do this and this meant to do this by way of helping. He did this, and the whole atmosphere changed, it was a whale of a success, just by talking in terms of perception.

Because people don't like having their varieties stolen, this is the point. And if you take away this man's variety, look at him. What did we analyse earlier? He has too little variety to deal with the process, which has too little variety to deal with the environment, And what little variety he has got left they're going to take away by saying don't do that, change your shirt, you know.

It's totally frustrating. So you mustn't do that. What you've got to do is things to encourage the guy to use his variety in helping him amplify it. Otherwise you might as well put a switch in there. Just a switch. A little computer that says in these circumstances do that.

If you are going to use a human being with leadership quality with the ability to react and adapt and so on, you had better let him reap. If you don't you are nuts. And that is part of the trouble with things like the church and the army which have come up before in our discussions. Because nobody dares. And when they dare, things go badly wrong. Look at liberation theology, and what happened to that. Some of you must know.

Haven't got a clue.

Has nobody heard of the Liberation Theology?

Is it the hippies.

Well, it came out of Latin America because the whole of Latin America is strongly Catholic, or alleged to be strongly Catholic. But nobody actually gets married and it's all very relaxed out there. In fact the way they handle marriage and the family is wonderful, I think, I don't think many people are actually legally married and they have children and they pass the children round and the little community handles the whole situation. Messes with this variety, perfectly happily and the role of the priest is not to go around saying. 'How dare you, you're living in sin'. As would happen over here. He goes around saying.

Bless you, you're doing a good job.
Very different.

So the liberation theologians.
Care to put a name forward?

Romaro

Paolo Friari

This bunch of people started to put forward a formal theology to account for all of this, and the Vatican sat on it because and this was a very bad tragedy, I think, because this was a growth point in the church which looked really promising. Of course, the Latin Americans carry on anyway, they don't care, but the spin off in the more anti-retentive part of society in Europe has been, not been good at all.

So, we now have;

in Environment, that's one line; squiggly line, that's two ;we've now got three and four.
All of which are cohesive to the organisation given that these things we perceive to be separate, for some reason, in our analysis.

What is the fifth line?

It's not there.

You have enough information to tell me what the extra line is that is not on the diagram.

How can I get this out of you?

Is it the connection between the red line and the environment?

No, we are just talking about this cross over. There is a missing vertical line. Not a connection.

Look, we have been talking for some minutes about the generation of variety this way and the containment of variety this way. Now, how do we know they are going to balance, because the theory of the law of requisite variety our whole notion of homeostasis says they must, doesn't it? That is the master stroke that all that is going on to be in balance. Well how do we know it is?

..channels...connected by which you...channel that the information is passed through, are they connected?

Which channels?

Between the environment and the management

That's what I call the horizontal.
Now I'm saying that there is something missing vertically.
That will match the vertical versus the horizontal in total.
Yes, now we are getting near it.
I am going to add a line. Where is the green?

What I'm pointing to is an overriding susceptibility that the vertical may not match the horizontal. There's nothing there that says it will. With any luck it will, because you are all doing the right things but supposing there's something left over.

This line, which I am putting in green, is there to accommodate any success.

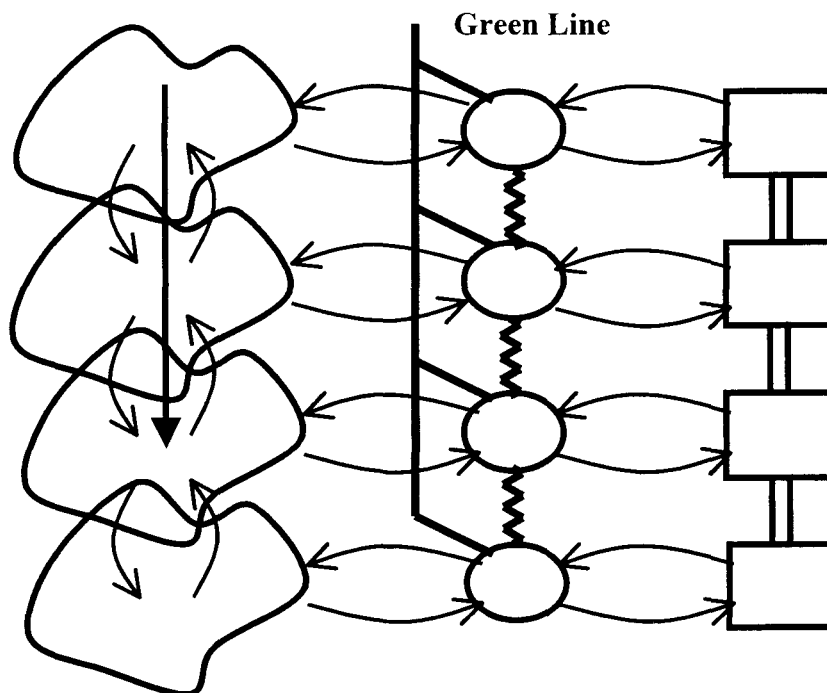


Figure 3 The Green Line (Audit)

This is to say if the horizontal variety is greater than the vertical variety, you are going to get out of balance and I want to put that line in to pick it up, and correct it.
Now I am really stretching you here, because I am asking you to make a hugely abstract judgement, but the interesting thing is that you go out into the, so called, real world and you find this green line all over the place, and I want you to try and see what it is.

Let's take the simplest example.

An ordinary little business does things, out here it makes some things.

There are all its lines and we want to know.

I don't want to feed you too much, I will if I have to but has anyone something to say?

it is your feedback...it is telling you that all things are in balance

talking about excess..perhaps its the amount of stocks you are carryingproducing too much yourself

That would only deal with stocks.

I'm trying to be very general here, about this disbalance. There are things we do in a business which are exactly the green line, and I want you to try and realise what it is.

something thats not actually involved ...like an appraisal

This is part of the system.

is it something that will come into the system but will be held in the ... later but starting its cause now

like an audit

An Audit.

That's the second time you've got exactly the word I've been looking for.

It's the Audit.

If one of these square fellows is running off with the funds, he's a crook. How are you going to catch him?

The rest of this system is not going to catch him. The one we have described because, it's working on the assumption that everybody is in this together not that someone is going to go mad. That means there is a whole bunch of variety going on in his strip of the horizontal system and you have to catch it. So the Audit is supposed to catch it.

there being an independent assessor rather than audit needs to be an independent assessor....

It can be an independent Auditor or but it can be an internal. You can have internal Audits. Of course it's not just money.

it can be a green audit

Absolutely

It could be anything that is going to pick up loose variety, is the point.

what if the auditor came from management, from the square box, and its just the square box who.....variety

they wouldn't say if they were the ones who were the crook in the first place, they are not going to say they are a crook...they just carry on making it look like...

They would do their best. But the point of the audit is to catch him.

But if they were doing the audit or someone is doing it for them....

No. No. Look at the green line. If one of these people is running amuck, the green line is coming down from upstairs, they are not in control of that.

What you are saying is, the person from the green line doing the audit...they could be doing it...

They could be. You can buy anyone off in the limit. But what we are looking at is a structure that's supposed to work.

So these kind of policing activities are supposed not to be corrupted, they may be, we can investigate all the consequences of that, and there is plenty of it going on, obviously. But the principle here is to use up any surplus variety. Although I was grateful to Lee for giving me the exact word I wanted don't stick too closely to this professional word 'audit', because what I really am trying to say is that the green line will absorb spare variety.

Let me give you an example, which you wouldn't automatically think of as being an Audit.

Let's suppose this company is working in Engineering. It has innumerable electric motors everywhere. Company's do, you know, you can't move for electric motors if you start thinking about it. Practically everything has a motor in it, and they are all different, because the people on the horizontal lines have bought this kind of motor because they like it and it suits them and because, because, because.

Then another line, horizontally, has bought a different lot of motors and we end up with a huge number of motors. Now that is a very great deal of electric motor variety. So somebody upstairs, and we haven't analysed what's happening upstairs, says what gives with all these electric motors? Just look at the amount of capital we've got tied up in spares.

Just take the obvious example. All these motors have their spare motors, and they have their extra windings lying about; and extra this, that and the other.

So somebody upstairs says all this variety....Now, how do you intervene? You don't want to come down the red line, and say, "You can't work for us unless you have the right electric motor". Come off it.

You don't even want to make it part of the resource bargain and say "Well I will only give you the capital if you switch to G motors". Also, come off it.

But what you could do is go to these managers and say.

Hey fellas we have realised that we have an enormous investment in all these motors. Is this sensible?

The other managers say

“Gosh, that much?” Probably not

So, upstairs says “we will come down, if you agree, the green line and go straight into your process, given that we have your prior permission as the manager”, which is the correct.... We will conduct a survey of all the electric motors and that will not infringe on your authority as the manager because you have just agreed that's a good idea. They'd come up now with a report. Now this is probably the work study dept., of the whole organisation, going to come out with a report saying. This is our recommendation . We need a variety of electric motors but not this much, and if we agree this policy it looks to us as if all the management's are going to be satisfied and we will cut our investment in all this crap by two thirds. Now that isn't to steal the authority and the variety off the manager, if he's agreed to it and if he likes the answer. Now we have really soaked up some spare variety, is what I am saying. So that is a sort of audit but it doesn't have the overtones of the financial audit where your looking for crooks. Anything like that. Kate very wisely said the green audit.

You could look into there and say what are we generating that is environmentally unfriendly. You can do any of these things. Please see them as part of balancing of the total homeostatic equilibrium of the whole show. If we do that, we don't get the unease that is generated by things being out of balance that no one has recognised.

there are now statutory audits in that respect as well now, with new legislation .. particularly with health and safety and European Council....that red line if fact runs back...

That is true and it shouldn't and needn't, is my message there.

The more you cram onto the red line the less people feel free to strut their stuff. You are reducing their really needful variety to do their job properly, and they get more and more frustrated. This is what we call bureaucracy, gone amuck, and that is what has been happening in Brussels and I completely agree with you. Then there're so much better ways of handling it.

Now the kind of thing that a works study dept. or a production engineering dept., can do on that line. Clever accountants can behave in that sense financially, the green thing and everything else. Another that occurs to me. Of course, in a free conversation like this, nothing I say is to be regarded as exhaustive, you know I'm just trying to bring points out. One of them, that is very important, is the "Audit" of Management Succession can I call it. We have to look to see if we have anyone coming up, and how we are training them, and that's a sort of audit. You're not looking for crooks and so on but you are looking for where the variety is going to work thin, is the other thing. It is common to find that a bunch of cronies have been running a show and they are all suddenly becoming sixty-five together and there isn't anybody in sight.

A lot of companies run cradle systems with their employees.

They do, and that's it. That's the green line.

That's a positive thing to keep everything in check. So if the systems start going wrong, they can be used in the opposite way in the form of the union,...I'm thinking of education particularly...about that book that you found in that firm well its like the national curriculum isn't it?

It is.

Quite happily doing their job and all of a sudden, they get landed on their desk a 10 volume escapade telling them what they are supposed to do, but not actually telling anyone....

I totally agree with you.

So, that comes through the red boxes which is headteachers in each establishment... It shouldn't the teaching staff who then revolt and are almost pushed back up that green line.

Yes, that's right.

Because there isn't an effective audit for them to use.

Yes, absolutely true.
(laughter)

Now you understand why you are frustrated.
You see people who don't ... sorry....

Why can't they go back to the square box, why has it got to have a ... ?

Now that's a very interesting question, isn't it?

The square box route, is an attenuator by definition, because the management haven't got time.. This manager hasn't got time to count his electric motors.
(Stafford points at chart)

The central works study dept., having been given permission to walk into the works and count the electric motors can do so. It has a project and it has the technology, in place, to do that. That's just fine, now always you must get permission otherwise you really are subverting the authority system, and that won't do at all. You can certainly pull this off if you're clever and consider it top management, and mostly they're not and that's why we get into a terrible mess.
If someone is corrupt in this square box is doing something and you are trying to find it and they ask you .. if they can do an audit which they'll realise the situation, they are not going

to give you permission are they?

They cannot.

You see, you are taking the case whereby one of the whole lines is corrupt? You go down this line, you guys are all in charge of debts., and I want to do this particular form of audit. Are you going to stand up and say . “You're not coming into my place”. Thats an instant signal that you are ... so you can't afford to do that.

That means that they haven't really got a choice have they. You are saying that its good that they've got a choice and they will not mind because they've said that they can do it, but you're saying that they haven't got a choice whereas they can say that they can do it.

You have, you see. Dealing with real crookedness is quite hard to argue, but the thing in general is that you are saying to people, “Do you think this is a good idea?”. If somebody says no, which is the choice, you expect them to have a proper answer. You don't say “No, because I'm ripping the system off and I don't want you to catch me”. So you've got to come up with a legitimate answer and often there are legitimate answers.

Take the works study example. You can say to the higher ups. Hey, look here we have got a terribly sensitive shop to this sort of thing. We are in a very difficult union situation where people are paranoid and you come in here and count our electric motors which you think is harmless this will be read as management interference and we are going to have a strike. That is an acceptable reason for not joining in, isn't it? If people are actually crooks then it becomes very interesting as to how you handle the variety.

Now I was called in by Royal Bank of Canada. to look at their security system. I spent one day doing it and resigned the contract. I said “God knows, you could drive a coach and horses through this thing, and you all seem to think you have got a clever system”. I won't be responsible for this, and I wasn't. None of you mentioned, in the newspaper this morning, forty ways to rip off a banks cash system.

This is what is bound to happen. I would think that financial skulduggery using electronics is at least one hundred times more than they say it is, because they are so much cleverer than the management. Management are sitting around in suites saying this, that, and the other, and there are all sorts of hackers out there about fifteen years old ...into the system.

Going back to the motors, how do the people know to ask the question about looking at motors?.

I'm often criticising accounts departments but probably somebody notices the capital tied up in the spares, and they say “do we really need to tie up all this capital”.

So, it could be anybody?

Yes. This is why I'm so interested in the green line. I'll give it a name later, but I've got ahead of myself and I can't give you the name ... it's System 3 star, and we haven't even got System 2 yet, so ... It's System 3 star and we haven't got to System Two yet. This line I want you to recognise because it balances the whole thing, is in many ways the most interesting thing because people are willing to talk about audits that's a word they know. They're willing to talk about works study dept., They are absolutely incapable of discussing the residual balance of variety in a homeostat, because they don't know what the Hell you're talking about. That is what the green line is about. Now I have written all these books. There are people all over the world in universities teaching the green line is the audit channel and reifying it, turning it into something solid. Reifying the thing. When they shouldn't. They should be perceiving it in this way.

The thing about purpose is that it is the purpose of the totality and it pervades everything so it's not a question of the green line having purpose. The organisation has purpose. The attempt to give a mission statement is an attempt to say what that purpose is and we have already seen why that doesn't work. What is really going to determine the purpose is the ethos that the top management manages to create in the place. Are we an ethical show do we care about the environment and so on. All the big oil company have whole departments now, working on the green thing. Making films, proving that they're not spoiling the environment and so on and that's enough isn't it? As long as you can con everybody into thinking that that is okay, you can go and spoil the environment until you are blue in the face. Now where is the actual purpose here. The actual purpose is to rip off the planet. What you are doing is putting dressage on that to make sure you're not caught. Well that isn't a green line. This line is a genuine contributor to adjusting the total variety equation between the vertical and the horizontal in order to reflect the purpose of the whole. You apply that criterion to most of the things that we have mentioned here and you are entitled to go and hang yourself. The EEC was mentioned. We have already destroyed the EEC in this conversation, if you think about it. Everything they are doing is precisely wrong, by these criteria. They are using the red line when they should be using other lines, the sense of purpose is all over the place. You've got Britain opting out of the social chapter, which is lunatic. In yesterdays paper it says we are going to suck them back in, which will probably give Major a purple fit. This is no way to run a Fish and Chip shop let alone the whole of Europe.

By the way, I meant to say yesterday, and I didn't. The Number of variables in the black box of running a fish and chip shop generates variety and I've tried to prove this, greater than the worlds capacity of computers to deal with variety. Now, there's a thought.

Variety is one hell of a thing, it just proliferates all over the place.

Our job in management is to contain it without being silly and allowing individual in our organisation to blossom as a person. We have no ideal how to do this. The whole of western society is in glut with trainers who are trying to do this sort of thing at enormous salaries I note. They are providing nostrums and putting people through courses. This is the only course I know of folks which is inviting you to think. That's my secret, nobody likes it very

much but you are a nice crew you are willing to have a go. Most courses are sitting there being told that this is the latest way of doing things, and what good is that?.

Teaching is as well.

Yes, I am afraid so which is terrifying.

Could you just remind me again. I can remember what all the other lines in the diagram are. I've forgotten now what the blue line is.

The blue line is the resource bargain.

If you count them you've got six vertical lines to absorb variety, and this will sum up this discussion because we ought to stop.

We are missing one. (laughter)

I haven't got a system two. I do apologise. We haven't got time tonight

System 2 is the sixth.

Forgive me. Just put that on the slate. I'll deal with that in the morning.

These lines which are five at the moment and will be six, are ways absorbing variety, and most people's perception of management is that it is all on the red line. No wonder then that people are looking for jobs.

Can we close on that note, its powerful.

... not really a very important thing, but is it always the blue line and the red line?

No, its what I had to hand.

I assumed that's what they were called.

When you get it all into place, you'll get the words OK. I don't care what the colours are.

Can you just explain the blue line again?

Its the resource bargain whereby suppose you are the System One and I represent the upper crust. I am saying to you, "Jane, what do you need to make your department effective?". And you say, "I've got to have a new computer, six more staff and here's my budget".

And I say, "OK, if you get this budget, these permissions, you are going to deliver the following, is that understood?"

And you say, "Yes". And that is the resource bargain, and then all you need is the self-vetoing homeostat. We need enough coming back from you to head office to give assurance that everything is working, and I do not want to see all your accounts cos I haven't got time to read them and what's more if you were a crook I haven't got time to spot it because you are too clever and you would cover it up. So that's not the way to control anything.

Nobody trusts anyone.

That's too bad and they should.

But look, let's take the case where things are probably crooked, which does exist.

What I am saying is that what you have got to do is put monitors on the homeostatic loops that will pick up instability. We went through that earlier today. And then we will say why is Jane's loop unstable and then we are likely to find out. We are unlikely to find out if she has cooked the books because she knows better how to conceal it.

So really there are two checks built into the system.

At Least.

At least. and that's the green line and the monitors on the

Everyone of these loops are supposed to have ..., everyone of the homeostatic loops ... now ... By the time that we've finished the diagram, there are going to be hundreds and hundreds of loops and you cannot examine them all, you see.

You've got to have little signals like President Sanganeti bus tickets. Just be clever about it, you know.