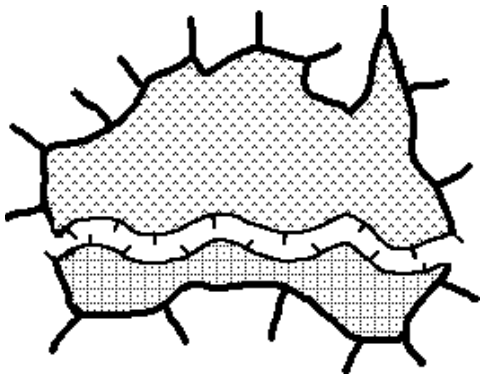
Chapter 119



NO CLOSER TO GOD — Imports, Exports, and Infocap

There is no special virtue in being an exporter — we are no closer to God than the rest of you

— John Hyde [1982]

South of The River; a Silly Story

Dear Diary,

It all started in such a small way. Of course all of us enlightened people who live north of the Swan River in Perth naturally feel a certain amount of pity for those those poor deprived souls who live South of the River.

It's often through no fault of their own, just an accident of birth, or perhaps lack of education, which stops them ever climbing out from their humble beginnings.

It's true that until the '60s we NOTREs had the only University in the State, so that every day their ambitious youngsters had to stream across the bridges to get a bit of learning, or else had to uproot and settle, temporarily and uneasily, in the poorest sort of lodgings available among we elite.

But of course those SOTRIs breed like rabbits, and in a spirit of fairness the Government eventually let them open their own university, to cope with their growing hordes as best they might. And it was made clear to them that there was to be no discrimination — their better talents could still perhaps win scholarships to the proper University, and we would at least maintain a token representation in their own new venture. It was the least we could do, to advise them on what to do and exert a little kind but firm supervision of their development.

But of course they weren't satisfied. Before you could say Jack Robinson they had wheedled their way into renaming one of their technical schools as a university, and claimed they had two to our one. As a matter of form we had to do the same, making it two all.

And although the new private university, actually named after us, has started off in Fremantle, everybody knows that Fremantle and South Perth are only notionally south of the river. They are really just NOTRE missionary colonies, part of the white man's burden. Just to be safe, though, the private university is soon to be moved back into our hinterlands, well out of the problem front-line border area.

Faced with a clear 3 - 2 defeat, some of the lower SOTRI elements looked round for something else to complain about. They settled on an easy and emotive target — money.

"Why", they started whingeing, "is it that we have to do all our special shopping in the NOTRE areas? Why do we have to pay them to go to all the best cinemas, to attend all the rock concerts, to see all the new plays, musicals, and overseas entertainers? We are just lining the pockets of the so-called north-of-the-river-elite, all we get is the dirty jobs and smoke-stack industries."

"Our factory and business bosses don't live with the workers, every day they drive over the bridges from their plush north-of-the-river mansions, staying just long enough to retrench a few loyal workers in order to keep their own fat paychecks safe".

It's pathetic, I know, but that's how some of them actually talk and think. They don't show any gratitude for the huge investments we have made in underprivileged SOTRI areas, our efforts to raise their training up to a decent level, our legislation to ensure that their squalid housing at least reaches a minimum standard of hygiene.

Now things are starting to look ugly. The SOTRIs are intending imposing Bridge Entry and Exit Taxes on people moving between the two territories. Even worse, they are proposing to apply tariffs on goods moving south, in order, they claim, 'to protect their own industries from a flood of cheap dumped NOTRE imports'.

And the latest, and perhaps silliest thing they propose doing, is to monitor and control all NOTRE investments in their areas. Their approval will be required for all new investments, they will have special limits on repatriation of profits to the north, and they will be moving to their own currency in the belief that that will save them from the problems which ours is currently experiencing.

It is inevitable and only equitable that we in turn impose stern restrictions on migration of SOTRIs into our territory. If we don't do this, we will be overrun with cheap labour and our own standards of living will start to fall — we certainly don't want to end up with a Wetback problem like they have in the United States.

It is indeed sad to see all this happening. More and more, it starts to look as if Premier Hanrahan will be right. Dear Diary, where will it all end?

Now Let's Be Serious

Yes, you are right, that was a ridiculous idea — it could never actually happen in Perth, could it?

Perhaps not. But parallels to this ridiculous story can certainly be found in real life

everywhere. The underlying points are: erection or maintenance of a syston boundary round what you see as 'your' people, identifying those 'outside' the barrier with other syston labels, and seeking to advantage those within 'your' syston at the expense of the others.

All very natural — Charity Begins at Home, after all.

The Seesaw Quiz

The Seesaw Quiz technique is one which I first noticed used in the seminal British TV comedy series, *Yes Minister*. It was used by Sir Humphrey Appleby to demonstrate to poor naive Bernard that the results of a survey of 'public opinion' on a topic were fundamentally different when the survey was approached from opposite extremes.

As a example here, I will apply the technique to the topic of Importing and Exporting goods, from the Australian viewpoint. A series of 'public opinion poll' type questions will be posed, and the answers given will be represented on a 7-point scale from highly positive to highly negative. Of course the answers are not actually derived from any poll, they are only my guess at what the majority answers might be in a particular case.

Importing & Exporting: A Public Opinion Poll

	-3 No, No	-2 No	-1 Maybe No	0 Don't Know	+1 Maybe Yes	+2 Yes	+3 Yes, Yes
1. Should Australians be allowed to export?							X
2. Should Australians be encouraged to export?							X
3. Should the Australian Government help exporters?						X	
4. Should exports be subsidized by the Government?					X		
5. Should Australian companies open sales offices overseas?						X	
6. Should they manufacture Australian-designed goods overseas?							X
7. Should Australians be allowed to own factories in other countries?							X
8. Should they be allowed to own holiday homes overseas?						X	

Now run the same sort of quiz in the other direction:

	-3 No, No	-2 No	-1 Maybe No	0 Don't Know	+1 Maybe Yes	+2 Yes	+3 Yes, Yes
1. Should the Government encourage importing of goods?	X						
2. Should 'dumping' of cheap foreign imports be allowed?		X					
3. Should Australian industries be protected by import tariffs?				X			
4. Should Australia try to replace imports with local produce?						X	
5. Should we try to finance developments from local funds?						X	
6. Should Indonesians be allowed to own holiday homes in Australia?				X			
7. Should Australians be encouraged to holiday within the country?							X
8. Should the Japanese be allowed to buy up any property they like in Australia?		X					

Now maybe the suggested results which might be obtained from such a quiz are a bit out. And of course results from such a quiz may be different in the future. But the general tenor of the results is probably not contested — things which are seen as desirable for Australians to do vis-a-vis the outside world are seen as undesirable for the outside world to do vis-a-vis Australia.

Logically this is hard to defend. Why should Exporting be viewed as Good, and Importing Bad? If you step over a national border, with various title deeds and bank deposit statements in your pocket, should your whole philosophy change as you do so?

MT does not venture to state that anything is Good or Bad. Its comment on the matter of imports and exports would be that all restrictions to trade flows would be likely to disadvantage those imposing the restrictions. Such restrictions would therefore be undesirable unless Asking Question One — "Are the restrictions on the grounds of attaining threshold health or safety levels?" — gave a 'Yes'.

The value of setting up a Seesaw Quiz is that it allows you to localize and identify what syston you are standing in. The example just given is a fairly loosely-structured one.

Suppose we re-ran the last question, on permitting 'foreign' ownership, in a closely-graduated sequence, and said "Who should be allowed to buy a house in Perth?", with a series of answers graduated from 'Anyone in the world', through 'Europeans'; 'Asians'; 'Asians married to Australians'; 'Australians living overseas'; 'New Zealanders'; 'British with right of residency in Australia; 'Children born in the US of Australian parents/ with one Australian parent/ with one British parent who lived in Australia for 30 years but died in 1940; Thursday Islanders with one parent from New Guinea; a Filipino fathered by an Australian serviceman; someone born on the Cocos Islands to Malaysian parents; someone from Tasmania; from the Kimberley; from South of the River.

In Chapter 111 the difficulties of deciding who was a 'foreign' owner were pointed out. Setting up the Seesaw Quiz on permitted foreign owners also brings out the decision difficulties. But an important point about the technique is that running the quiz from different ends is likely to give different results. Starting from the 'obviously yes' end, and getting more and more uncertain, will delay slamming down the drawbridge to a point much further on, than the point of raising it for candidates increasingly easier to accept.

There is a general MT inference which can be drawn from this situation:

Proposition 119A**. No syston boundaries are completely sharp, instead they are only profiled barriers

This brings us to the point where we can improve the detail of our Matrix model.

Back To the Atom

Right back in Figure 101.1, the first diagram in this book, we showed various 'models' of the atom. These ranged from the undefined round objects envisaged by John Dalton, through the planetary and shell models developed when research identified the electrons and nucleus which made up the atom, and ending with an 'electron density' image. In this last model, (d)

in Figure 101.1, the electrons are represented as 'smeared out' into a probability cloud, where the density of the cloud is indicated by contour lines.

This particular image is taken from a detailed structure determination of the mica mineral muscovite. The full determination is shown in Figure 119.1, which is from Zvyagin [1967].

Mica minerals have pronounced layer structures, which is why they can be split easily into very thin sheets. Before heatproof glasses were developed, windows in ovens and stoves were made of thin, transparent sheets of mica rock.

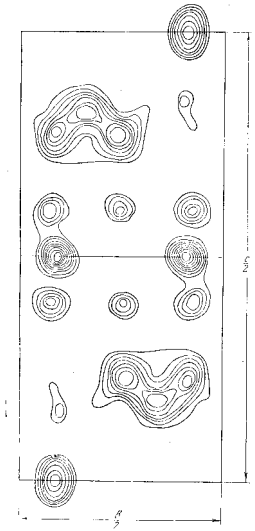


Fig. 119.1. Projection of the muscovite structure on the 0yz plane

Structures like this muscovite one are worked out by subjecting the specimen to a high-energy stream of electrons or x-rays. Individual atoms in the specimen deflect or scatter the stream according to the extent of the electron clouds around them, and this can be used to build up pictures of the electron clouds themselves.

In the picture, places where the electron-cloud contours are numerous and closely-packed represent heavier atoms with lots of electrons. These are like tall, thin hills, but the contours represent electron density rather than height.

On the other hand, light atoms with fewer electrons show up with fewer, more widely-spaced contours, like small, low hills. The analogy is not exact, because the electron-density image is actually a projection of the electron clouds of the various atoms from a given viewpoint, perhaps across the layers. If viewed from a different angle, say along the layers, the projected image would be different.

Notice that some of the images are run together, appearing as pairs or groups of hills instead of isolated peaks. In some cases, this is only a projection effect, showing one atom standing behind and to one side of another. But in others, the atoms are actually very close and touching, so that their electron clouds are somewhat merged or shared. This electron sharing is, of course, the basis of chemical bonding.

Infocap Density Clouds

Earlier the analogy between atoms and systons was mentioned. In a further analogy, we can depict the infocap which systons contain in a similar way to that used to show electrons in mineral structures, as in Figure 119.2.

The intention of this figure is to give a visual grasp of infocap contents in Britain, Australia, New Zealand, and Japan, plus the role of infocap in relations between these four countries. This example has been selected because the geographic outlines of the four countries give an immediate grasp of the players involved, which helps to introduce the concept. The infocap blobs within the individual countries are not intended to accurately reflect the geographic boundaries.

Features of this infocap-density image are as follows. Australia has internal divisions

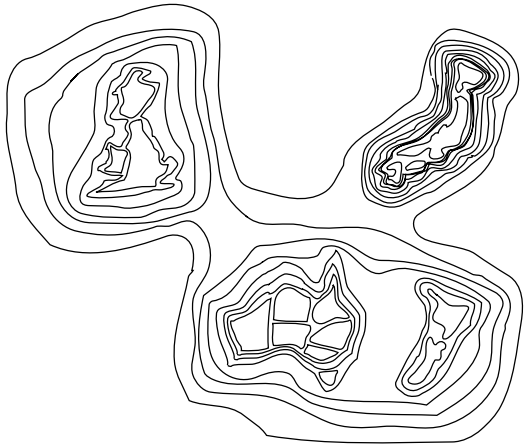


Fig. 119.2. Infocap density gradients for the UK-Japan-Australia-New Zealand grouping

based on state boundaries. Some contour lines surround the whole country including Tasmania, inner ones exclude Tasmania. New Zealand has a distinction between the North and South Islands, but lies within a common contour envelope with Australia.

Britain has its own internal divisions, and also lies within a shared, but lower, contour with Australia and New Zealand. It shares only its lowest contour level with Japan. Japan looks different — it has a lot of closely-packed contours. This implies that Japan has a high infocap content, and also a thick, impermeable syston skin cutting it off from the rest of world.

There are no numbers on the contour lines, we do not yet have units in which to measure infocap. Of course, this figure is only the first attempt at setting up an infocap-density model, it could stand a lot of refinement. However, it can give an accessible visual representation of data which would be much less accessible in the form of pure numbers and tables. It can be expected to be fundamentally better than the latter, because it is a 2-dimensional representation, and so can carry a much greater information flow than a zero-dimension quantity like a number.

Don't Fence Me In

The infocap-density image also gives a further insight into the actual nature of syston skins. It would seem that these skins may actually be describable in terms of infocap characteristics. The suggestion is that syston skins are made up of steep infocap density gradients, that is, places where the infocap density changes rapidly over a short distance.

Proposition 119B*. Syston boundaries consist of steep infocap density gradients***

As an example of this, look at Japan in Figure 119.2. Anyone who has had extensive

dealings with Japan will know that Japan is 'different'. The inhabitants use a language and script which is both complex and not closely related to any others. Many would say that the social patterns, and even the thought processes, of the Japanese are quite hard to grasp for an outsider.

This situation is rather different to that with, say, one of the tribal peoples of the Amazon Basin. These people might also have a language which was difficult for an outsider to grasp. But the vocabulary of this language would be only a tiny fraction of that of Japanese, and their social patterns would also be far less complex.

In MT terms, the infocap content of the Amazon syston would be much less than that of the Japan syston, and so it would appear on the infocap-density image as a much flatter hill. Another way of looking at it would be to say that synenergy flow into and out of Japan is impeded by a very steep syston-boundary barrier.

It may be that in the future we will be able to examine such matters in more quantitative and analytical terms. An infocap-density gradient of the steepness currently possessed by Japan may be very close to unstable. In this case, the accumulation of more infocap by Japan could lead to 'slumping' of their whole hill — perhaps a theoretical description of increasing distribution of Japanese capital funds overseas.

A possibly more powerful visual image is to think of a country-syston like Japan, not as a simple round mountain, but as a volcanic cone. The lava it contains, its infocap, can only build up so far inside the cone. If lava accumulation continues, inevitably it will eventually either overflow the lip of the volcano or will break through its walls and flow down the lower slopes. In either case, the result is a wider, perhaps lower, profile in which the slope gradient will not go over a given steepness.

What's Wrong With Hydroponics?

Growing plants hydroponically, that is, using not soil but an inert water-based medium, can be quite an efficient means of production. But it does have a number of practical drawbacks.

The plant nutrients required may be carefully calculated and supplied to the plants at the right time, but it is easy for things to go wrong, so the growth achieved is not what was expected. The plants may even die. Diseases can be a real problem, with the ability to sweep right through the operation in spite of stringent routines for hygiene.

It seems that the 'root' of the problems encountered with hydroponic production lies, not with doing anything wrong, but rather with the need to do a great many different things right. A hydroponic system does not have the resilence, the 'forgivingness' of a natural soil-based system. Instead, it is close to what physicists call a 'meta-stable' system, like a ball lying on the very top of a hill. Only the slightest breath of wind is needed to nudge it over to the point where it will gather speed and run right down the hill. Left in the valley bottom, however, it is in a stable position. If a breath of wind blows it up the slope, it will soon roll back to its original position.

It is no secret that the lack of stability of hydroponic systems is often tied up with their lack of buffering capacity. The inert materials, such as rock wool or gravel, used in place of soil do not have the same capacity to absorb excess nutrients or heat and give them out again when

in short supply. Even at higher theoretical levels, there may inadequate buffers; hydroponically grown plants are usually all clones or genetically very similar, and if a disease strikes one, in its precisely-controlled state, it will hit the lot, all existing in the identical state.

So here the buffer missing is a bit of genetic diversity, or a range of variation in physical conditions. This diversity has a cost, the buffer capacity needs paying for. In a good hydroponic setup, only the exact amount of chemical nutrient required will be used, with no costs for overfeeding or leaching. But to go this route does mean walking the tightrope.

From the MT viewpoint, a buffer represents an investment of infocap. At first sight, it might look like redundant or unused infocap. This applies at every syston level — why do we teach so many of our children a foreign language in school, for example, when for most it would appear a waste of resources? Very few of them will actually use the language in their jobs.

The MT answer is the same as always. Teaching the child a foreign language increases the infocap stores of the individual and of the syston which contains it. This will make the syston more diverse, and hence more stable.

Proposition 119C**. A syston with extensive buffer capacity will be more stable than one without

This Proposition does not seem particularly controversial, but it is one often in conflict with conventional thinking. There is seldom a distinction between putting resources into buffers, and wasting resources.

Most research fund committees, for example, watch very carefully to guard against 'duplication of research'. Before you get the money to research the structure of muscovite, for example, you would need to show that a thorough literature search gave no evidence that it had already been done. "No sense in re-inventing the wheel".

There is sense in this, but it can be overdone. The basic drawback of this approach is that it assumes that Researcher A is identical in performance to Researcher B, and this is not necessarily true. Worse still, it disregards the possibility that Researcher B will notice some side aspect of the research process which may turn out to be far more important than the original objective. Start off to invent a wheel, and come up with a ball-bearing, perhaps.

There is a virtue in redundancy. Perhaps the final word here may come from our genes. Of the genes contained in human DNA, some 80% appear to have no purpose whatsoever — the so-called 'junk genes'. It is these self-same 'redundant' genes which may keep the human race stable in the face of unknown factors, today and in the future.

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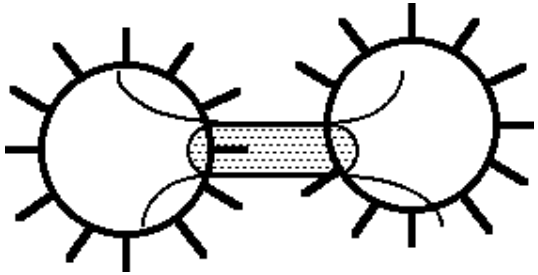
Chapter 120



DON'T TELL ME ABOUT IT — Arms-lengthing

"When the system is operating perfectly, no decision need ever be made"
— Sir Arvi Parbo, Chairman of BHP, 1991

The Barbados Telephone Directory

The Barbados telephone directory has an unusual feature. It lists people with silent telephone numbers.

Of course it doesn't list their actual numbers, if it did they wouldn't be 'silent'. Instead, it gives their address as normal and a note about their number, for example:

Rampton, Mrs P....The Villa, Plantation Rd Bridgetown .....Silent Number

What is the point in this? The thing is, the Barbados telephone company is giving you some information, but not all. First off, you know Mrs Rampton exists and has a telephone. Then, you know where she lives, so you could write to her, or, if it was an desperate matter, you could travel over and knock at her door. If you were ingenious you could maybe locate one of her friends and ask them for the number, or ask them to pass a message on to Mrs Rampton to phone you urgently.

So there is enough information available for anyone needing to contact Mrs Rampton to do so, but not enough for anyone completely unknown to her to ring up and annoy her at will.

Tell Me EVERYTHING

People often assume that the more they know about a problem or situation, the better they will be able to handle it. Often this assumption turns out to be quite unjustified.

First there is the matter of information overload. This can be a problem with many computerized information search systems. If you choose your topic and put in a request for a listing of all documents on that topic, you may be stunned to receive a document several

hundred pages long to plough through — and that is just the references to the documents, not the documents themselves.

This problem can be alleviated, but not eliminated, if the search system is an on-line one. If your first request merely tells that the system knows about 15,000 publications which refer to your topic, you can try and define your topic more and more narrowly until you reduce the number of documents to a manageable number.

There is a real skill in this, and inevitably even the best searcher will eliminate some references which might have been useful, and end up with some 'false drops', items which appear to refer but are actually irrelevant. Once I carried out such a search on 'edible nuts' and ended up with several references to doughnuts.

But more important than this, is when you end up knowing more than is good for you.

Ignorance is Bliss

Computer programming is one of the basic information sciences, and its development and evolution has taught us a lot about how people think and how information may best be handled. A great deal has been learnt, not just about the actual techniques of programming and system design, but also about ways in which huge developed software packages or 'suites' may fare in a real and changing world.

Out of this experience has come the technique of 'Information Hiding'. This is a technique where the person or team programming one module of a large package is not allowed to know about the inner workings of other modules. They are told what sort of information will come into their module, what the module is supposed to do in processing it, and what sort of information is to be passed on to other modules or outputs in the system.

Computer programmers include some of the most creative, eclectic, and eccentric individuals in the world, many of them live far out on the fringes of the Matrix. Computer programs are in a class like nothing else previously developed by man. Some of the more complex ones do approach the status of being living systems, of representing simple non-biological systons.

In some ways, a computer program can be thought of as a snapshot or projection of part of the mind of a programmer. If the programmer never thinks about people with Asian names, his program may not be able to cope with them satisfactorily. Hence the story about an Arab student in an American college, the enrolment system processed and transliterated his details in the prescribed manner, thus reducing his name to just a comma.

I once attended a talk given by a computer company programmer who had written what was called a Cobol Compiler — this was a program used by the computer itself to convert a program written in the Cobol language into that used internally within the computer. The interesting thing was that when the speaker talked about how his compiler worked, he referred to the program, not as 'it', but as 'I'.

Time is of The Essence

In Chapter 105 I mentioned the struggles of programmers in working with limited resources, such as small computer memories. When interactive graphical programs, for

example video games, were being developed, one of the real limitations was in response time. Images on a screen had to change at a rate comparable with the users' response times, else they would walk away from the excessively slow program in disgust.

To get the required response times, programmers would take liberties with their programs. Instead of restricting these to the 'authorized' facilities in the manuals, they would make little raids into unauthorized, private parts of the machine operation. If they were writing a program in a high-level language like Fortran, they would add in little subroutines in machine language which would dive in and out of the operating system, where Fortran was not allowed to go. Also, any real computer has features which are not specified in the manuals, little tricks by which things can be done more quickly, but not according to documented facilities. Programmers would find out about these undocumented features and use them.

In a way it was like somebody who wanted to get the freshest bread, and who found out that if he waited at traffic lights near the bakery gates at a certain time, he could pull a hot loaf out of the back of the bread delivery van and replace it with the money, while the driver had turned his head to watch the girls going into the high school. Effective, and probably not illegal — assuming the driver was just going to sell the bread on his rounds anyway.

But all things change, and while computer manufacturers and programmers exert some effort to make their products transferable to improved equipment ('upward compatible'), these efforts do not extend to 'undocumented features'. The bread company was under no obligation to see that its new delivery van had its doors at the back, like the old model, and not at the side.

The result of this situation was that even though the programmer might have built a program which was quick and effective, that program would be very vulnerable to incidental changes elsewhere, as when the operating system was patched or a new disc drive was added. If the programmer had stuck simply to writing his program on standard lines in the authorized language, then his program would have been stable and should have worked through whatever upgrades were made to the equipment, the operating system, and the program compiler.

Hence the need for 'Information Hiding' in programming practice. Don't tell the programmer what other parts of the system are doing — or at least force him to ignore what he knows.

Only Touch it with a Barge Pole

In the legal profession, and now in many other areas, transactions carried out between two parties who are at pains not to have connections, other than those needed for the transactions themselves, are said to be operating 'at arm's length'.

It seems to me that such a principle of insisting on 'arms-lengthing' of operations could be a very valuable feature of MT designs. In Chapter 116 it was mentioned that arms-lengthing was one of the principles consciously used in designing the United States Constitution, under the heading of 'Separation of Powers'. It would be the MT view that this principle would be a significant reason for the subsequent achievement of pre-eminence by the United States.

The same principle has been called for in many other places. The usual requirement is to avoid 'conflict of interests'. Thus, in town and shire councils in Australia, councillors are

required to declare 'their interest' in matters under consideration by the council, and not to vote on such matters. Perhaps this might involve a councillor who owned property in an area due for rezoning from residential to commercial, which might increase the value of the property.

On the personal level, such conflicts of interest are common and can lead to moral dilemmas. A businessman who owns a small manufacturing plant might have to choose between two alternatives, one of which would benefit his company to the detriment of his family life, and the other the converse. A Minister in a state government cabinet position can be pulled many ways — between the perceived good of their Department, of the Cabinet as a whole, of the Goverment, of the State, of their State Political Party, of their national Political Party, and, of course, of themselves.

All these examples are actually examples of conflict of interest between systons. The MT response to this situation is to suggest that the first thing to do for the party involved in the conflict is to identify the systons involved, and then determine which syston they are supposed to be standing in. They can then act in the interests of that syston.

This sounds a simple enough move, but in practice is much easier said than done. Suppose a state cabinet minister believes a certain action will be to the benefit of the State, but if implemented, will most likely lead to their party losing power at the next election to the Opposition Party, which would *not* be the benefit of the State, let alone themselves. What should they do? Another major problem, where there is inadequate arms-lengthing, concerns corruption, personal fallibility, and uncertainty of conditions. Let us look at a real example.

The Black Hand Strikes Again

Look at the following news item, relating to business migrants to Australia (Figure 120.1).

New laws to cover business migrants

By STEVE MANCHEE

CANBERRA: People entering Australia as business migrants under a new business skills category will have three years to prove their expertise or have their status cancelled.

Immigration Minister Gerry Hand announced the new independent-business skills category yesterday and said migrants would be extensively monitored and fined if they failed to comply.

The category, to begin in February, introduces tough new entry requirements based on proof of past business prowess and a rigid points test.

The new system replaces the business migration program which was scrapped earlier this year after recommendations by the joint parliamentary public accounts committee.

Mr Hand said new legislation, which amends the Migration Act and allows him to cancel the status of business skills migrants within three years, would be introduced soon.

The legislation would also make it mandatory for entering migrants to take part in the monitoring system, he said.

Applicants will be points tested and graded on the turnover of their business, age, English language skills and capital backing that can be transferred to Australia.

Mr Hand said migrants who had a business background useful to Australia in manufacturing, trades and the development of innovative technology would gain more points.

"The new category will inevitably mean that some business skills applicants cannot pass the tighter selection criteria," Mr Hand said.

A new independent panel will be set up to help the Immigration Department vet applicants. It will include business community experts and Federal and State governments.

Since the business migrant program was introduced by the Fraser Government in 1981, it has been marred by allegations of organised crime, rorting, tax evasion and money recycling.

Fig. 120.1. News item from 'West Australian', 1991 December 18

Let us put aside for the moment the view that the action described in the article is the most crass and linear-thinking approach, certain to scare off any prospective business migrant who might consider investing half a million dollars in Australia. Instead, pull back and look at the article with MT eyes.

There are these people who currently live outside Australia, and who might want to migrate to Australia, right? There is a particular Person in Australia who will have his representatives look at such people, investigate the accounts of their businesses to check turnover, look at their birth certificates to check age, see how well they speak English, and check their bank statements to see how much money they have, OK?

If this Person in Australia likes what is found out about a particular Applicant, he may write 'Possible' on his belly and let him into Australia. Then, for the next three years, this Person will 'extensively monitor' the Applicant and fine him if the Applicant does something the Person does not like. And if the Applicant doesn't do something the Person thinks he should, the Person just writes 'Reject' on the belly of the Applicant and on those of his family, and sends them all back where they came from. But first he deducts the money for their fares from their bank accounts, most likely. Have I got it right, now?

It's Too Dreadful to Even Think About

The situation just described would be widely condemned as unfair, unworkable, and acting against the interests of all concerned, even from a conventional view. From the MT viewpoint, too, it has everything against it.

First, there is a total lack of arms-lengthing. One person within Australia is responsible for deciding, on a day-to-day basis, the thousands of tiny details of the treatment and fate of large numbers of other human beings, decisions which could be made purely by whim and without appeal.

Then, there are all the possibilities for Things to Go Wrong with the process as set up. Corruption and bribery are clear possibilities, Mr Hand himself may be totally incorruptible, but can he guarantee that all his agents, and his successor, will also be?

And again, it does not have to involve money, just prejudice. If the father of one of Mr Hand's agents died in a Japanese prisoner-of-war camp in Burma, is it not a possibility that this agent might 'exercise his discretion' and give a Japanese applicant rather lower marks than might be awarded to a Norwegian?

Finally, there is the uncertainty of it all. There are no clearly established, written, independent, repeatable procedures to go through, no definite and obvious benchmarks to be attained. Groucho Marx once said that he wouldn't want to belong to any club which would accept *him* as a member. I would think that the financial competence of any businessman who would be willing to put half a million dollars or so into such a risky migration assessment would be under such doubt as to rule him out automatically.

Tell It to Me Straight

Recent revelations on the operation of the White Australia policy in former years have been very sobering. Former immigration officers have recounted how 'black-balled' applicants were simply ruled out by repeated application of the European-language dictation test. So, if the applicant passed the test in Spanish, they would be given the one in Dutch, and if they passed that, on to Finnish, Romanian, Greek ... Who could survive such tests? No-one.

There is still a perception, particularly in Asian countries, that a covert White Australia policy operates. Australia has many migrants from southern Africa, but I have yet to meet a single one who is black. There is still a perception of bias in immigration, a perception which experience tends to support. Such a bias may be normal — SIOS appears everywhere — but it is not likely to diminish unless the rules are clear, open and unbiased and their operation is divorced from personal prejudice.

Save Me From Myself

There is another aspect of this problem. It would be an MT assertion that lack of arms-lengthing in its operations will disadvantage a syston. But what about the people involved in a conflict of interests? Is it fair that they should have to make heart-rending decisions? Is it good for their syston if such dilemmas are widespread?

There is currently some controversy in Perth over the role of the Perth City Council, which has oversight over the central business district and a few, not all, of the suburbs. The Lord Mayor has complained that with the large number of councillors and the complexity of decisions, everything is slowed down and many useful projects are just stopped in their tracks by the inertia of the current process.

In an ideal world, city councillors would not need to make decisions, the situation outlined in the quotation at the head of this chapter would be attained. There would be no conflicts of interest, no need for councillors to 'declare interest' and withdraw, no discussions on whether this project or that project should be 'allowed'. Only application of the rules would be needed.

Of course, we are not in an ideal world, and any given current set of rules would need amending in the light of future changes. But it would be possible to work towards establishing such Rule Structures, to work to make them continually more simple, wider of application, more varied and open to voluntary adoption as Rule Structures, and subject them to continual refinement and testing. That is what MT design is all about.

In summary, this chapter has presented logical reasons why arms-lengthing is good for society. It has been suggested that it reduces the possibilities for corruption and for bias, eliminates the stress on individuals having to make difficult decisions, and forces the clarification of the rules so that they can be operated at arms length, rather than decisions being made 'on the run'.

We can note that rule clarification and stabilization implies a decrease in uncertainty, and hence an increase in infocap. In assembling the only Proposition of this chapter, we can forget the reasoning which has led to it, and present it purely as an item for testing.

Proposition 120A. Arms-lengthing of the interaction of its systels will advantage a syston.***

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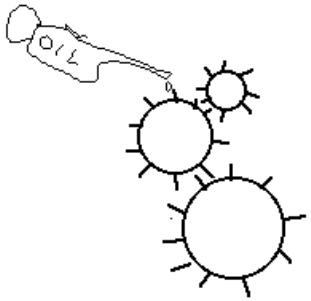
Chapter 121



PICTURE THIS — Tools of Matrix Thinking

"A wise man will make tools of what comes to hand"
— Thomas Fuller (1732)

Tuning up the Intellectual Engine

Up until now in this book, we have concentrated on designing and assembling the intellectual engine which is called Matrix Thinking. Now let us take some time out to look a little more closely at some of the tools and techniques which can be used to keep this Engine operating at high efficiency.

Most of the efforts involved in applying MT can be classed as either Analysis or Synthesis. Analysis is essentially the taking apart of an existing situation, to see what is happening within it. Synthesis is essentially the design of a situation which does not yet exist, often using information gained from a previous analysis.

Nevertheless, in practice there is not a clear boundary between these two operations. Synthesis can be applied to generate a projected situation, and then analysis can be applied to test it. And when working in an MT environment, much of the synthesis can be sucked directly out of the Matrix and then tested, rather than coming from a previous analysis.

Picture This . . .

A common ground in the application of MT is the use of what we can call 'scenarios'. This word is used in the conventional sense of a picture of a situation, but is extended to cover the description of functioning parts of the Matrix at any level — not only the interaction of groups of human beings in particular environments, but everything from cosmology of the whole universe down to biochemical interactions in an animal.

So a scenario may be the same thing as one of the 'mind models' mentioned earlier in this book, applied to a physical situation. In most examples which follow, 'scenario' will have its familiar use of a situation in human society. But the term will be applied both to a projected or envisaged situation, and also to an existing one — we can apply 'scenario matching' in building up a picture of what is happening somewhere now, or even in the past.

The general technique is to put together a scenario for a particular situation, identify its parts and elements, and then try to refine the picture with more detail until the scenario matches reality to the accuracy desired. The first elements to be identified are the systons.

We in Indonesia

Indonesian has two words for 'we' — and they mean different things. For a native English speaker, the fact that there can be more than one meaning is perhaps surprising.

One of the Indonesian words, 'kami', means 'we, not including the person addressed', as in "we will never yield to your demands". The other word, 'kita', includes the person addressed, as in "shall we go down the pub now?".

In English, 'we' encompasses both meanings. The Indonesian distinction makes it easier to know who are the actors referred to, it makes it easier to determine the systons involved. The first step in building any MT scenario is to identify these systons.

MT Checklist # 1. Attempt to identify the systons involved

In the last chapter, we mentioned the different pulls exerted on a Minister in a state government in making a decision. Identification of the sources of these pulls is an example of syston identification, and realization of 'which hat was being worn' should be an aid to making a decision.

The next thing to do is to to check the identity of these systons by consciously moving out to wider systons, and in to narrower ones, to check your true position.

Tag and Label Testing

Often the syston you are really standing in can be localized by deliberately applying tags or labels which are normally applicable, but in distorted form, as wider or narrower systons. Consider the following quotation:

"My only regret is that I have but one life to give for my suburb".

Here is a quotation which has been made ridiculous by shifting the syston involved from 'country' to 'suburb'. In developing a scenario including a chauvinistic group, the true bounds of that group can be worked out more exactly by seeing where the tag would still probably apply. Sometimes the result may show that you are standing in quite a different syston to that initially assumed.

Another syston-shifted tag:

"The United Nations yesterday voted to continue the prohibition on selling packs of red meat weighing more than 500 grams in Western Australia on Sundays"

Now don't laugh, there is genuinely such a regulation in force in Western Australia — a

territory the size of western Europe. What makes the tag ridiculous is the fact that the United Nations is involved. The result of this tag-shifting is to suggest that such matters be left to much more localized bodies — Ask Question Four.

MT Checklist # 2. Verify a syston by shifting to narrower and wider systons to see whether tags and other features still apply

What Far Boundaries?

The next technique involves localizing the cut-off levels for a supposed syston boundary. In Proposition 119A it was suggested that no syston boundaries are completely sharp, instead they are profiled — a hedge rather than an infinitely thin metal sheet.

A good way to localize syston boundaries is to devise various Seesaw quizzes, as in Chapter 119. By running them in opposite directions, some compromise value may be agreed on.

MT Checklist # 3. Use Seesaw Quizzes to localize syston boundaries

There is a background observation here. If it proves very hard to localize a syston boundary, say if it is very hard to decide whether particular people should be allowed in a group, this may imply that there is no justification for having a boundary at all.

Proposition 121A**. If a syston boundary cannot be easily localized, there may be no purpose in establishing it

A Glass and a Half of Full Cream Milk

Readers may remember that brilliant science popularizer Professor Julius Sumner Miller, known also in some quarters for his advertisements for a brand of chocolate. In his analyses of scientific phenomena, Professor Miller had a regular question — "Why is it so?".

In the MT toolkit, we can use two similar questions to advantage. The first is, "What is it *for*?", and the second, "How can we use it?". We will list these formally and then look at some examples.

MT Checklist # 4. Ask "What is it for?"

MT Checklist # 5. Ask "How can we use it?"

A Matter of Fingerprints

Everybody is familiar with human fingerprints. Most people will know that they are distinct for every individual, no recorded case is known of two people having identical fingerprints, not even identical twins.

The use of fingerprints to establish the identity of criminals is well known also, and perhaps their use just to verify identity, as in a security system. Those with a deeper interest in this field

may know that the different patterns of whorls and loops also give some racial information — for example, African pygmies tend to have more complex patterns of whorls than Europeans.

Nonetheless, even in quite technical treatises about fingerprints, a question seldom asked or answered is this: *What are fingerprints for?*

Actually, that isn't a particularly hard question. The answer is almost certainly that the raised skin ridges which form fingerprints enable the owner to distinguish surface textures. If one surface feels like velvet, another like sandpaper, what that really means is that nerve endings in the fingertips send different and distinctive messages to the brain when the fingertips are passed over differently-textured surfaces.

Right, that answers what fingerprints are for. We can look a little closer at the mechanisms involved, and deduce something else about them. If fingerprints are to be effective, the separations between adjacent skin ridges must be fairly uniform, else the nerve messages sent on touching would be too mixed up and irregular for the brain to make sense of. And indeed, if you look at a particular set of fingerprints, you will see that adjacent skin ridges have similar separations, even on different fingers.

There is a case where this uniformity breaks down. Another thing about fingerprints which is taken for granted is that they do not change as an individual ages. In particular, a baby will have the same fingerprint patterns as the adult they will become. This means that the average separation of the skin ridges will increase as the child grows and the fingers get larger.

That brings us to the second question, *How can we use fingerprints?* We already have some answers to that, but suppose we look for a further answer, dependent on the further information we have just extracted. A possible answer is, that children can be used to detect surface texture differences which are too fine for an adult to be able to distinguish — "as smooth as a baby's bottom".

Now that was a fairly simple example, nothing particularly to do with MT, to illustrate the technique of asking these two questions. The first question is used in an analysis phase, the second in synthesis mode. Let us turn now to some more complex examples, one perhaps trivial, the other more profound, in the area of MT analysis.

Why Women Nag

Why do women nag? Here is a question which perhaps Professor Higgins had not been enmeshed enough to come to, but in one of the sequels to *My Fair Lady* he could be expected to voice it. What do I mean by 'nagging'? I mean the continuing repetition of some admonition or desire by a woman, intended to drive an associated man into a change of behaviour or completion of some action.

We will not enter here into an argument as to whether nagging is confined to women, other than to note that a man who does nag is apt to be referred to as 'an old woman'. Instead, we will return to the original question, and ask why it happens at all.

Here is an area where conventional linear logic is stumped. Nagging is, by definition, ineffective. If it was effective, it would not need repeating. Q.E.D.

Now apply MT techniques, and ask, not 'why?', but 'what is it for?'. Here is a possible MT answer. Looking around the world, I notice that with modern life expectancies, men have

enough 'juice' in them to be able to raise two families, one after the other.

Now that is a situation which MT would see as advantaging the wider syston. It involves greater diversity, greater infocap accumulation, not only in a genetic sense, but also in the extra synenergy flows generated — two crops per year instead of one. Two women are cycled through the child raising/education/release business per man, or, conversely, a more diverse set of children may be raised with two males rather than one.

All right, I accept that this suggestion displays a heartless lack of sensitivity to real marriage problems of the day, one with no moral backing. But it is not me suggesting this, it is MT.

So the sobering MT conclusion is that women may nag because that tends to drive their man away from them, tends to cut off the synenergy flow and harden up his idiosyston boundary, ready to try again with another, currently more appealing female idiosyston. Love is better the second time around.

If there is any validity in this suggestion, it is a clear illustration of Proposition 114B on movement of infocap across syston boundaries. What the woman does is bad for herself, but good for the wider syston. In other circumstances, such a sacrifice might be seen as noble or philanthropic.

Why People Die

Here is a topic in which most people have an intense personal interest. Modern times have seen major increases in life expectancies for many groups. But there is an exception.

That exception is for people who are very old, approaching the century. The life expectancy of the average Australian 99-year-old has actually decreased in modern times, and the same thing has happened elsewhere. This can be understood — modern medicine is 'propping people up' for far longer than it used to, and so getting more over progressively higher barriers — but only just.

So although life expectancies have been increasing, what might be regarded as the maximum possible lifetime has not. This figure is around 120 years, and evidence from past ages suggests that the very rare long-lived individual of twenty centuries ago could approach this same figure.

Why do people die? The physiologist might respond that the various parts of the body just wear out. That answers the question for the individual, but not for the syston, not for society.

After all, there is nothing physically impossible about longer average lifespans. Tortoises can manage 200 years without difficulty. So we might apply MT and ask what the limitation in lifespan is for, what it does for the syston, rather than the individual.

Clearly it is not a matter of conventional efficiency. Perhaps 20 years are spent on educating and training a new individual, it is wasteful if all that effort pays back for only 40 years instead of 80. Instead, the MT answer may lie in cycle times, in half-lives, not of people, but of processes.

It is a characteristic of individuals that they resist change, particularly as they get older. If they get to the top, they want to stay there. Older people cling to the position they have reached, and often it is only a general regulatory retirement-age scythe, or decreasing physical or mental

health, which cuts them off.

From the MT viewpoint, change represents infocap flow, and so will benefit the wider syston. Syston dynamics will therefore sweep away the individuals who oppose change, by one means or another, because it is to the longer-term benefit of the syston to do so. This is relevant to the limitation of the term of the US President, mentioned in Chapter 116.

From another angle, later in this book we will see that the time from appearance of a fundamental new discovery in science, to its general acceptance and use in society, is very close to 40 years. I do not believe it is purely a coincidence that this period is also the average professional life of a working scientist.

Hence the MT conclusion is that it is better for society if people don't live too long. It may be depressing, but this conclusion would imply that all the work done on increasing life expectancy, on the search for immortality, is likely never to achieve a major breakthrough. Solve one problem, cure one disease, and another syston-generated killer will come into play. Perhaps the best way to play it, is to look for 'quality of life' — keep strong and healthy till the eighties, then pop off overnight.

The Case of the Vanishing Vaporware

Enough now of establishing the where and what of systons, we can move on to questions of what's inside them and how the bits work together. The first thing to look at is the infocap content.

MT Checklist # 6. Check the infocap content

The infocap content of a syston is similar to the capitalization of a business, and has a similar effect on its viability. But infocap, as mentioned, is not just money, but can include all sorts of other intangible assets.

With a professional pop group, for example, there are all the usual matters of cash flow, and assets in musical instruments and vans. There is also infocap content in skilled management and contacts, and in musical competency of the members of the group. And there may be infocap in more tenuous things, in the 'charisma' of the lead singer, in the 'luckiness' of the agent.

In the area of computer packages, matters of publicity and sales networks can be very important, as well as the usual software competency and hardware suitability. Realizing this, a major US syndicate once put together a brilliant marketing and publicity effort for a forthcoming package.

Unfortunately, they neglected a vital part of the infocap content, the actual writing of the necessary programs. As a result, the whole effort fell in a heap. The trumpeted announcement of new software packages which fail to ever appear is not unknown in the industry — such packages are referred to as 'vaporware'.

Is It Alive and Ticking?

Another thing to check is whether the required synenergy flows are present — are the