

# Yunnan experience

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## Why Yunnan



I am writing this back at my base in Shenzhen after a trip to Yunnan. Why Yunnan? My official explanation is that my interest is in how soil affects our health and Yunnan has a traditional agriculture unspoilt by modern technology and I wanted to see how this affected people's health.

The real reason is it is an absolutely fantastic place with some of the world's best scenery.

If you have done the classic tourist trail of Hong Kong, Shanghai, Beijing and the great wall and Xian and are looking for something a little more authentic and appreciate rugged mountains then Yunnan may be the place for you.

## Scientific methodology

As this trip was supposed to have scientific underpinning I should describe the methodology.

We have the double blind randomised trials, the statistical observational studied, the mechanistic method – while the method I used is known in scientific circles as gawking which is defined as 'To stare or gape stupidly'.

You may ask why I selected this particular methodology so I need to explain.



I used to do a lot of business in Hong Kong and when Deng Xiaoping opened up China I hopped across the border to Shenzhen - then a rather poor and primitive village.

Of course now it has a population the size of Australia - oozing with high tech companies and overloaded with some 4 million cars including numerous Bentleys and Lamborghinis fighting for the last remaining parking spot.

That was over thirty years ago and since then I have married into a Chinese family and visit China typically twice a year.

I have reconciled myself that it is impossible for a Laowai (foreigner) to ever understand China and the only possible action is just to gawk and try and make sense of the complex mystery that is China. This often requires delving into the world of fantasy as you will see later.

In the conventional scientific methods, you select what you are going to study - gawking is different - it guides you to what you study - as you will see this can lead to travels over whole areas from the Mongols to the innovation process in a rather erratic way but it has the overwhelming advantage in forcing you to look at what is happening in the real world.

## The impossible - understanding China



Let me give you one example; - take the Great Wall which anyone would have to admit is a master piece of engineering. Western logic would say that this massive piece of engineering was to keep out invading hoards.

But this is not Chinese logic - what do they do - they wait until the hoards arrive - throw open the gates so the hoards can overthrow the emperor. The massive engineering was not to keep the hoards out but to impress them that this was a rich and prosperous country worth attacking.

I have long given up trying to understand how China really works (and if any foreigner claims to understand China it is because they have no idea what is actually going on). But let me give you my highly fanciful, distorted and inaccurate interpretation of some key parts of how China works.

China has been going now for the best part of five thousand years with a whole string of emperors - names like Xia, Qin, Han, Sui, Tang, Song Ming etc. are now part of the Western vocabulary.

Each dynasty has lasted for about three hundred years then been thrown over for the next dynasty. So what goes here? Each new dynasty starts off with good intentions and a beneficial emperor. But each successive generation gets distracted by what they see as the true role of an emperor - building palaces, having feasts and fulfilling the needs of his many concubines while ignoring the running of the country.

At first this does not matter too much because of the greatest of all Chinese inventions - the Mandarins (or civil servants). Traditionally China has what must be the world's toughest examination system and selects the ablest people to join the Civil Service then gives them the toughest training in the area they are going to operate in.

It is very difficult for us Westerners - who are used to lawyers, accountants and bankers being in charge of running the country - to conceive the Chinese philosophy that if you are managing roads and bridges then it may be good to have expertise in Civil engineering (or whatever area you are managing).

Many people rank the Chinese inventions like paper, printing, the compass and gunpowder as the great Chinese inventions. To my mind the invention of a talented and qualified Civil Service is the ultimate Chinese invention. They managed to run the country quite effectively for many years without any involvement from the emperor until his excesses get just too much.

## Out with the old and in with the new Emperor

However good the Civil Service is at some point the excess of the emperor just get beyond tolerance and the community - the Mandarins and peasants - manipulate an overthrow (may be with the help of the Mongols or Manchurians).

When you have a population the size of China it is pretty difficult to resist the combined pressure of the masses for change. It has only taken five thousand years but the message has eventually got across.

The second basic principle came from the Mongols - a much ignored part of history considering their dominance for a few generations.



For many years' no one even thought about the Mongols - they were just a collection of warring tribes that fought amongst themselves and didn't seriously bother anyone else.

Then along came Genghis Kahn who was smart enough to realise that the Mongols with their reversed tension bows and synchronised horsemanship with stirrups had a world beating technology and gathered the warring tribes into a unified fighting force.

## Mongols, the Chinese and gunpowder

One of the quirks of history is the Chinese had invented gunpowder but thought that just throwing a few fire crackers at the enemy would frighten them off. A good strategy if you were fighting an army of five year olds but not the Mongols.

They captured the Chinese engineers and persuaded them - with typical Mongolian subtlety - to use their gunpowder technology to fire high velocity stones at opponents castles and knock down the walls - something that had eluded the Mongols up to that time.

Now the Mongols were totally invincible and defeated anyone who stood in their way. European cities were falling like flies before them and was only saved when the Kahn died and the armies returned to Mongolia to elect a new Kahn.

For some reason not explained in the history books the Mongols - instead of going back and knocking of Europe - which they had the technology to easily do - turned Eastward and captured China instead.

The lesson of how their own technology of gunpowder was so effectively used against them does not seem to have been missed by modern China which is amongst the most effective users of technology - theirs or anybody else's.

But then in one of the mysteries of history the Mongols - by far the most effective fighting force of the time with complete world domination in their grasp - went back to fighting amongst themselves and almost disappeared from the history books.

China was later invaded by other nations - particularly the English who forced opium trading on the Chinese and the Japanese who slaughtered far more Chinese (civilians, woman and children - not just soldiers) than any other country - even dwarfing the mass killings in the Soviet army.

A lesson the modern Chinese have well taken to heart.

## What all this to do with modern Yunnan?

It is really very simple - however powerful the Government is - political stability requires an ever increasing standard of living throughout the entire Chinese population.



The success of the Lamborghini driving Shenzhenites is clear beyond doubt but Yunnan is one of the poorest states and also has the largest number of minority groups.

There is no option but to raise the living standards of the poorer people of Yunnan.

How this is being achieved is a classic example of modern China at work - which I will attempt to describe with gross distortion of the truth - all in the interest of creating interest and hopefully a little amusement.



You don't have to be long in China to realise that they have a total obsession with building bridges - in fact I would not be surprised if they discovered a bridge building gene in the Chinese.

The highly efficient modern Mandarins saw the solution when they realised that Yunnan has the most stunning collection of gorges which make perfect sites for building bridges.

This satisfies their number one requirement of bringing employment and hence money into Yunnan.

## De-unchuffing

This is a basic strategy which you see right across China where they have built just huge numbers of multi storing housing complexes in the middle of nowhere. You see these dark uninhabited monsters all over rural China.

To Western eyes this looks economic madness but to the Mandarins behind these project it all makes perfect sense. With high rural poverty and unemployment Mr Tang - the peasant - is likely to be seriously unchuffed watching Mr Wang and Mr Wu fighting to see whether the Bentley or Lamborghini gets the last remaining car park while he mends the puncture in his dilapidated bike.

However, if he has a job on the building site he can upgrade to an electric bike and look forward to moving into a modern apartment at some point in the future. He is likely to be less unchuffed hence in technical terms he has been de-unchuffed.

The reality of course is that no one really cares about Mr Tang - it is the fact that there are half a billion Mr Tangs enduring a poverty level which would be classified as lower third world - this is a potential for political instability which has to be addressed - even if it means empty apartment blocks and a confused Australian iron ore industry.

## Back to Yunnan and its bridges

So we now have the scenario where the civil engineering Mandarins have searched out the most spectacular site to build their bridges which will provided employment for the locals.



No doubt when the Mandarins are celebrating the completion by consuming vast quantities of the potent rice wine when some junior Mandarin - who is not tuned in the system and forgets his lowly status - remarks that it would be rather nice if the bridge had some roads going to it.

The senior Mandarins rebukes him - but in the morning when the hangover has cleared they accept the point. The only problem there is no way they can make a road down the steep sides of the gorge. They realise that the only way they can get a road to the bridge is by creating a massive network of tunnels.

When they realise this is a project which dwarfs the costs of building the bridge - they think it a brilliant idea which will employ an army of people - so at the lightning speed that the Chinese construct things - there is this magnificent network of roads, bridges and tunnels in which you can speed through a tunnel like a high speed rabbit to emerge to be like an eagle flying over a massive gorge.

By this time the junior Mandarin who risen through the ranks - remembers his upstart junior days and reflects that they now have the most superb road network (which would make the road to our major airports look like goat tracks) and it would be rather nice if they had more than the occasional bullock cart.

## Hotels and bed sheets - but not for me

This is where the Chinese system really strikes a win. The Governments are quite happy spending large amounts of money building roads, bridges and other infra structure - the high speed rail system is simply phenomenal. They do this very well - very different from the old iron rice bowl days.

But the way to get traffic on the roads - and improve local prosperity which is what it is all about - they need tourists. This should be easy as Yunnan has the most spectacular scenery.

But to do this they need hotels, restaurants, shops, hire cars and all that stuff.

The Mandarins may be the smartest brains in the land but changing hotel sheets is not their thing - they need to get the private sector involved.

The stories I have told you up to now about the Chinese just making bridges more or less for fun is obviously make believe - but the fact is they have constructed these simply amazing road, bridge and rail systems and my silly storied are just my way of emphasising what a great achievement they are.



The story may be make believe but the end results - the roads - are totally for real and if you don't believe me you can go and see for yourself - and if you are not impressed there is something wrong with you.

## How Governments work

There is a widespread view in the West that Governments can't do anything and everything has to be farmed out to private enterprise. The Chinese achievements show that this is just plain wrong - the Mandarins can plan on a bigger scale and with a longer time scale than private enterprise - at least when they set their minds to it.

But there is a much greater achievement and again I have to resort to a bit of make believe to show what a dramatic achievement it is - and that it the control of the financial system.

The Chinese have this rather heretical notion that the Government should control the financial system who in turn work for the benefit of the people.

This is in direct contrast to the West where the financial system thinks they (and their big business cronies) should control the Government and to hell with the people.

China is just as capitalist as America - the only difference is the control of the financial system.

## Building hotels while avoiding changing the bed sheets

The Mandarins decided they needed a tourist infra structure but did not want to end up changing bed sheets themselves - so they needed to persuade private enterprise to do the job. The snag was there were no tourists to go into the hotel - there was absolutely nothing there to start with and the financial sector which backs companies want quick profits.



The fact is that on my trip there were hundreds of empty hotels, really modern and luxurious. How did the Mandarins get the private sector to build hotels when they would almost certainly stand empty - at least at the start?

Finding a way that the Mandarins and the private sector can effectively work together is to my mind a greater achievement with more economic and social benefits than the spectacular engineering achievement of the Mandarins themselves.

Now believe it or not they have not told me how they did this so again I have to do a bit of fantasising but the end results are just as real as the roads and bridges.

Let me start with a couple of examples which are nothing to do with Yunnan but illustrate the principles.

## Pharmaceuticals



The Mandarins decided that China needed a modern pharmaceutical industry and wanted to establish this in a rural city to create local employment - essentially a green field site. Pharmaceuticals are a high tech industry requiring a high level of technology and a skilled work force.

So how did the Chinese do this? First they set up a major university and recruited experts from wherever they could and set about training an educated work force. This is not a short term operation but takes many years - not for the get rich quick financiers.

Next they want to bring in overseas companies with their expertise.

## Red, white and grey envelopes

This is where the red, white and brown envelopes come in.

Red envelopes are a traditional part of Chinese culture given at special occasions like marriages and births - the donations are often quite significant and play an important role in setting young couples up for life.



White envelopes are used by the Governments to foster their aims - in this case attracting overseas companies. They are perfectly legal but may breach the strict terms of some international agreements - but this does not worry the Mandarins too much.

These overseas companies employ the young - highly theoretically qualified - but inexperienced young graduates. They gain practical experience in the foreign companies and after a few more years become skilled in both theory and practise.

The next phase is helping to establish a local industry - as this is where one of the greatest achievement of the Mandarins come in.

To set up a major locally owned industry requires both a skilled labour force and capital and this is where the great breakthrough of the Chinese comes in - the brown paper envelope.

Anyone who has traded into Asia has had to deal with brown envelopes - it is endemic. For a long time, I wondered why this was allowed - the Chinese police force is large and sophisticated and at any time they could have eliminated the brown envelope practise - but they didn't - why?

My fanciful explanation is that it gives the Mandarins control of the financial sector. Our Western culture is hamstrung by our financial system which is focused on short term profits and control. When they inject money into a company they directly or indirectly control the day to day running of the company forcing a short term focus onto the management.

## The tale of Mandarin Zhou, President Wang and inspector Tang

The strength of the Mandarin operation is long term planning so the Mandarins want to control the financial sector. Let us set up a fake scenario. Mr Zhou - a senior Mandarin - wants a banker to invest in a local start-up pharmaceutical company.

President Wang - of the local bank - is very reluctant as it is a high risk, long term project with slow returns - bankers like safe short term investment with high returns - so as in the West the answer would normally be negative.



However, Mr. Zhou call on his friend Inspector Tang and very politely suggest that there may be some interesting information to learn about President Wang being involved with brown envelopes - an activity which is highly illegal and can end up with the last memory of the participant being standing in front of a pop marked wall.

Inspector Tang arranges for some phone taps and some clandestine electronic surveillance - something that Inspector Tang department excels in. Soon the dirt roles in and Inspector Tang arranges a very polite visit to President Wang - as befits his status - not directly accusing President Tang but enough to cause him some concern so that his mistress notices a distinct lack of vigour in their love making.

The next morning Mandarin Zhou calls on President Wang and asks him if he has had a chance to consider whether he will finance the proposed pharmaceutical plant.

President Zhou confides to his old friend that he has been preoccupied with other matters.

Mandarin Zhou assures President Wang that these matters could be easily 'dealt with' - but it may just facilitate the process if President Wang could take a favourable view on the investments in the proposed pharmaceutical plant.

So China ends up with a highly effective local pharmaceutical industry.



Similar strategies have been used in other industries. Not so long ago the only Chinese cars were distinctly different (euphemism for crappy) then the white envelope technique was use to encourage overseas car companies to set up plants.

As young engineers gained practical experience they were enticed to local companies whose products improved by leaps and bounds.



## Innovation the third wave - need we worry?



Now I like making up silly stories and some people actually find them funny (before they get locked up) but there is many a truth spoken in jest.

Remember I have been hopping in and out of China as part of my previous job for many years.

My work then was developing and promoting computer aided engineering (CAE) and as soon as the borders were opened I made my first visit to Shenzhen.



When thinking about modern China and where it is going in the future it is well worth while reflecting back on those days and the dramatic changes that have occurred since.

It is hard to find polite words to describe the state of technology then - and impossible to find politically correct words.

So image (actually for real) the picture of a highly sophisticated imported production machine sitting on a dirt floor in what was essentially a farm barn - with a bunch of Chinese engineers staring at it without the faintest idea of how to operate it while a chicken sat on top of this high tech machine reviewing the entire shemozzle.

Get the picture?

At that time my company was leading the world in our somewhat specialised niche selling to high technology countries like Germany, Japan and the US. These countries had years of experience in the field - China was puzzling on how they could catch up and saw that computerisation was a way they could not just catch up but leapfrog the rest of the world.

Even the chicken agreed with the approach.

So I was presented with a bunch of recently qualified engineers straight from University but with no practical experience. And of course that leapfrogging approach worked and now China has some of the most sophisticated manufacturing plants in the world (alongside a few old style factories complete with supervising chicken).

## China's first phase of mega industrialisation

This first phase was a national priority and stunningly successful.

If you don't believe me just go the local department store and turn a few products upside down to see the Made in China label. (If it carries a western brand label it was still probably made in China). And if that does not convince you come to Shenzhen which from a rural village has a population the size of Australia and far superior traffic jams - involving more Lamborghinis and Bentleys - than on any Australian freeway. (If that is a measure of success).

This is the first phase of the Chinese industrial revolution simply stunning in its magnitude and unprecedented in history.

But if there is not an economic law equivalent to Newton's first law of motion there should be.

It would go something like this - for every economic success there is an equal and opposite reaction.

This economic bonanza has created the world's greatest migration. I was well aware of the millions upon millions of people who have migrated from the rural countryside to the cities to participate in the bonanza. This is really a migration as each Chinese state operates more like a separate country rather than a state like Queensland or NSW.



I was well aware of the size of this migration and that many children were being left behind to be looked after by grandparents or other family members. What I was not aware of until my gawking on this trip was the number of children which were simply being left to care for themselves as best they can.

My level of language competence does not qualify me as the world's best gawker for China. I may have a reasonable vocabulary but my pronunciation is so bad that they have not the faintest idea of what I am saying. In fact, my pronunciation is so bad that whatever I say what they hear is 'is your mother a camel' which is not good for international relations.

It needs just a slight error in pronunciation and the meaning changes dramatically. It doesn't take much of an error for beef stake to become menstrual pad. I recommend that you do not go around China ordering medium rare menstrual pads from the local restaurants. They may just oblige.

They get their revenge by talking so fast I have no idea what they are saying. OK I can get by in some situation like finding a toilet or getting a decent massage but that may involve a bit of pointing - particularly in the massage parlour (but it works - sometimes with surprising results).

## Mass migration

So getting back to the mass migration - my numbers may be a bit screwed up - but I have the figure of seventeen million kids living in rural area with no adult supervision or care - may be just a marginally older sister. OK the number may not be correct but it is a seriously big number.

This rural poverty is just not socially acceptable or stable - and if there is one thing that the Mandarins have taken to heart it is social stability - they must act. One thing that the Chinese will not stand for is instability.

## China's second phase

This has led the prime emphasis to shift to improving the lot of the rural poor. In the teenage parlance China does not **do** social security is **does** jobs.



This may involve building a magnificent freeway system in remote mountainous country with empty hotel, monster apartment blocks in the middle of nowhere plus many other projects which would completely baffle an economist from the Chicago school of economic rationalism but the Chinese will always put pragmatism ahead of theory and it is beginning to work which leaves the Mandarins to think about the third phase.

## China's third phase

At this point you may be saying that you are reading this to learn about how remote rural Chinese are caring for their soil and producing the healthiest food the world has ever known.

Food is going to be the forth economic phase and OK I am getting to it but before we get to the real meat we need to just look at the third stage of Chinese development

I told you up front that the scientific method I was using was gawking. Now the problem with gawking is that you have to gawk at what is there - you don't choose what to gawk at - that is the whole point of gawking.

The strict scientific process often gives the correct answer to the wrong question - gawking often give the wrong answer to the right question. I try and mix them up - hopefully to give the right answer to the right question - not the wrong answer to the wrong question.



My gawking shows that we are about to see the third phase of China's development - into high tech and innovation - and that they are setting about this with the same long term planning and determination that they have adopted in the first two phases.

I know that I have many overseas readers but this is really aimed at my fellow Australians. One of my favourite saying is that the stone age didn't end because we ran out of stones. This was really intended as a metaphor - rather than to persuade our Government to deprioritise all mention of the stone crisis and peak stone.

If our political leaders had been bad boys (or girls) and played truant by skipping the last day of that boring conference on whatever it was in Beijing - and instead taken a car trip around the local sites they would have seen the forest of empty apartments building - constructed from Australian steel - rising from the rural landscape like some film set for the end of the world.

They could not possibly have missed the sea of solar panels and windmills whichever way you look.

If they could look on this and reflect on the stone metaphor and fail to realise that relying on our coal and iron ore reserves is not the smartest strategy - then I would rank this as one of the greatest oversight since the Chinese let the Mongols nick the idea of using gunpowder to knock down castle walls to create - what for the time - was the ultimate war machine - which would have captured the world had the Mongols not started to squabble among themselves.

Ah! History is so full of lessons for us to ignore.

But at long last we have got there - and now innovation is way up there on the list of national priorities. (Or so we are told).

I feel I should let out a big cheer except for my gawking which tells me that China is about to embark on its third development phase which is going to be based right here - in Shenzhen - that city of dramatic change - where I am currently writing this.

## Innovation - my home turf

I should have put a link to this point as up till now I have just been making things up - in a fictional dialogue - because I have relied on the not so reliable method of gawking for my information.

But when it comes to innovation I am on my home turf - this has been my life - so when I found out from my gawking that China was moving into the innovation business - probably in competition with my home country of Australia my ears picked up. The obvious question is which approach is likely to work best?

Neither the Chinese or Australian Governments seem particularly anxious to reveal their plans to me but a bit of gawking give a fair idea but first let us have a look at how the innovation business typically works.

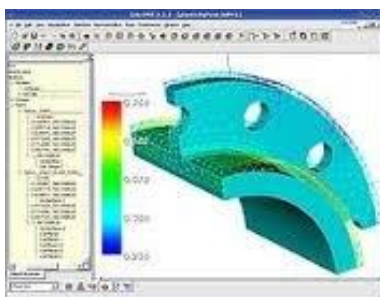
This is not some hypotheses but based on my actual experience and reinforced by looking at the story of many other innovators.

## Innovation in the real world

Innovators don't come out of the blue - in my case I had been working in my professional area for some ten years before I set up the company which was eventually to prove successful. (My first company when I was a lot younger failed - this is a common stage for innovators, stuffing up is excellent training).

Next it requires some sort of envelope in which to work - in my case I was a lecturer - not I admit a very good one as I was preoccupied with technology.

I was interested in solving various engineering problems using computers but this was in the days of submitting punched cards to a mainframe computer - a pretty hopeless process. But I found out that as a member of staff that - late at night - I could enter the holy of holies - the inner sanctum of the computer control centre - and work live on a terminal.



People talk about eureka moments and this was one for me - I could see that computers were going to totally revolutionise engineering design. I got that one right anyway.

Following the classic path - I gave up my day job, took out a second mortgage on my house to buy what turned out to be the second microcomputer to be imported into Australia - sent my wife out to work - sold the kids - well I tried but no one wanted to buy them.

Luck was on my side (luck and timing are key ingredients for innovation) as the software I wrote had international appeal and the company went on a helter skelter growth ride.

But no company can grow on a single innovation and I had the challenge of getting my company to create a major new innovation every three years. This is a common pattern among innovative companies.

But then two things happened. First I was stupid enough to get old - I had forgotten to activate the de-aging switch which I understand is located at the back of the neck but wears



off - finally disappearing at the age of forty. Secondly the company had grown to the point where I needed to think about external capital.

My investigation into the venture capital market showed a very poor state of affairs with effective control being handed to the financiers - not my scene - so I handed the company over to a group of senior managers and I started a new stage in life of soil, water and food.

As I feared the control of the company rested in the hand of the financiers who dramatically changed the company from a being focused on technical innovation with the focus shifting to being a vehicle for acquisitions. Eventually the company was bought by one of the American software giants for a bit shy of half a billion dollars which to me was a totally stunning and unrealistic figure.

Let's look at what really happens.

## The Chicago School in the technology age



The Chicago school of economics - which has at its heart the theory of economic rationalism - has had a dramatic and in my view a totally damaging impact on Western economies.

The underlying logic may have been perfectly sound in previous times in the age of the village market but a little gawking of what happens in the modern age of technology would show just how outdated it has become.

Classic economic theory is well attuned to the dangers of monopolies and oligopolies - which are now managed - to some extent - by legislation but has failed to come to terms with the age of technology. A new term is needed so I have coined the name technopoly.

It has the same aims as the monopolies of old - control of the market to allow raising prices to generate unjustifiable profits - but it works in a different way to old style monopolies.

It works on the simple reality that modern technology is so complex that no one technology can survive in isolation and needs to be integrated into a total system or package which can be readily accessed by consumers.

The organisation striving for control does not have to create the range of technologies needed to form an integrated package themselves - they just need to recognise and acquire the technology.

## Early technology integration

An early example is our good friend Genghis Kahn and the Mongols who were not exactly shy about taking control.

It is absolutely true that they developed one technology themselves - the reverse tension bow - which could fire significantly longer than any other bow of the time - the best part of half a kilometre.



But they also acquired the technology of the stirrup (without paying royalties) from a small tribe on the Russian border and integrated them together allowing them to fire their bows from the saddle.

Other armies had both archers and cavalry but they were not integrated with the archers on foot while the cavalry relied on swords and lances for attack.

The integration of the two technologies gave the Mongols an overriding advantage. They could simply move in on their enemies until they were just out of range of their enemy's arrows and use their archers extended range to inflict major damage.

The enemy's response was to send out their cavalry - a formidable force with heavy armour and formidable lances giving them complete superiority over the Mongols - at close range anyway.

The Mongols had a virtually infallible strategy - run away. Unfortunately, (for the enemy) they often fell for the bait and the cavalry would be on hot pursuit until well out of range of any possible protection from their archers.

The Mongols - who had perfected the technique of firing backwards while retreating - would then slaughter the cavalry - then return to finish off the now unprotected archers.

In these pre-internet days, they did this time and time again with the enemy always falling for the trap with devastating results.

However effective this strategy may have been it did not work too well when they started to invade Europe with its towns protected by castles and walls.



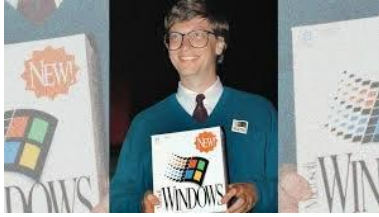
It did not take the Mongols long to work out that it is not much good trying to head but a two-metre-thick wall with a horse.

But you don't have to invent technology to benefit from it - all you need to do is recognise it. While it may be thousands of kilometres away on the other side of the world the Mongols recognised that the Chinese has a technology - gunpowder - that could be particularly effective in knocking down walls.

So - showing the benefits of long range planning - they turned around - went all the way to China - captured enough Chinese engineers to control the technology of gunpowder and returned to Europe as an unstoppable force knocking off one city after another with almost infinite ease.

Had their great leader had better timing and died a few years later the history of Europe would have been totally different - but he hadn't - so the Mongols returned home to elect a new leader. An example of the benefits (for the Europeans) of compulsory voting.

## Modern day technology integration



These basic principles of technology integration form the basis of the economics of modern day society.

Bill Gates did not invent the mouse - but he was smart enough to see that it enabled the graphical user interface which would make computing simple enough to become universal.

He also put together a whole range of software packaged into an integrated package.

I can remember this era well - there was a whole range of word processors, spread sheets, data bases and the likes all readily available in the market place from many companies and in most cases better than the Microsoft offering. But they were separate products without a common means of communication so it was a real clart trying to create a working package from scratch.

Virtually no one was going to bother when they could buy an integrated package from Bill.

Whether or not it could be classified as a monopoly was the subject of major law suits but it was all irrelevant - Bill had a technopoly.



The mobile phone is often portrayed as at the leading edge of technology. But did Steve Jobs invent the touch screen, Wi-Fi, the flat camera, the lithium battery - of course not - he was an integrator.

Large companies with financial clout and backing rarely develop new technologies themselves - it is so much easier just to shop around and buy a company (often small and struggling and happy to take the money).

For a relative pittance they can buy up a bunch of companies who have just emerged from the start-up phase and have a viable technology - integrate them into a total package creating a technopoly - charge unrealistic high prices and make a serious fortune.

Even better they can have their products made in developing countries at close to slave labour rates with minimal quality control so they fail after two or three years - and as long as there is a new model which is in some small way different - the customer will not be too disgruntled with have to keep on forking out a week's wage every year or so for a new phone or whatever.

They may even sit outside in the freezing cold overnight for the privilege of being at the front of the queue to hand over their money.

Whether we like it or not this is the way modern technology works in the West.

## Damage from the Chicago school

John Citizen may be quite happy with this situation - at least for the time being - believing that the range of Government organisation with reassuring sounding names like Consumer Protection - are there to protect his interests.

That could and should be the case where it not for the unfathomable influence of the Chicago school of economic rationalism.



By baffling powers of persuasion, they have managed to convince many Governments around the world (including Australia) to decimate an effective and experience civil service and replace it with short term contracts to the private sector.

Without the experience or long term commitment this has handled effective control to the financial sector who in turn have effective control over the corporate sector which in many instances has undue influence over the nominally elected Government - pseudo democracy. (Particularly but not limited to the US.)

However not so in China. I am not talking about political systems here - over the last few thousand years the Chinese Mandarin system has shown that they effectively manage the economy - with or without the supervision of the nominal heads of state where typically emperors are more interested in building palaces, feasts and keeping his concubines smiling.

## Watch this space

Coming up we have a most interesting scene with both China and Australia making noises about becoming leaders in innovation.

Of course neither Government confides in me what their plans are. The Chinese have a tradition of not saying anything then doing it while the Australian tradition is promising everything then doing nothing.

But the scraps of information that fall into my gawking net indicate the Australian approach will be to have a major program to develop start-up companies (but will do little to tackle the real problem of restructuring the financial sector to support innovation with stable long term capital) while the Chinese will quietly wait to buy up any Australian start-ups which develop seriously useful technology.

The Australian entrepreneurs will be delighted to be able to pay off the mortgages - collect their spouse back from the slave market and even repossess their kids.

Every year my company was bringing in tens of millions of dollars into the Australian economy - small business I know on a National scale but still positive - now by the combination of integration and capital it is bringing in hundreds of millions of dollars - not to Australia but to the American software giant. How common is that?

The chance of Australia having a significant high tech sector is remote until the myopic performance of the financial sector is addressed.



China could well end up replacing the US as the leading purchasers of high tech companies in the way they have replaced the US as the major manufacturing country.

China is still preoccupied with the second phase of creating a viable economy in rural areas and we have yet to see them really at work in the third phase of innovation.

They have done the normal things that most countries have done of setting up technology parks, linking Universities with start-up and my gawking has shown a particularly effective scheme of internet based angel investors from the Lamborghini and Bentley feuding crowds when they eventually park their vehicles.

There is already an army of unemployed recently graduated scientists and engineers equal in size to the Australian population - trained on the same theory as they build housing blocks - to be ready when needed.

They already have achieved major technology advance in computers.

Google must have stuffed up using their chopsticks at some banquet but the Chinese decided they would set up their own version of the Google empire.

I recently had an interesting example of how effective they have been with their version of Google maps. All Chinese drivers use the local version - they already know the roads but they get information on traffic conditions.

I assume - knowing about privacy or lack thereof in China - that the movement of every car is re-laid back to some master computer which then directs traffic to avoid the latest jam.



Shenzhen is about the same physical size as Melbourne or Sydney but has the entire population of Australia crammed into one city with all their cars from motorized rickshaws to Lamborghinis. Just like in Australia they all like to go out for a Sunday trip so traffic jams are spectacular.

Our return on one trip back to Shenzhen was blocked when the wonders of computer science struck. Seeing a twenty kilometre traffic jam ahead the super computer diverted all the traffic from the free way onto minor roads - so we were able to wiz along at one hundred kph.

Seeing the minor road blocked the super computer diverted all the other cars back to the freeway to reform the traffic jam behind us.

Such a parting of the traffic has not been seen since the waters parted for the Israelites.

Do you believe this crap - well in China do as the Chinese do where truth is a negotiable quantity - but there is many a truth spoken in jest.

## Back to food

However, while I have talked a lot about the software industry - which was my professional life - there is an even bigger and more important industry - which is now my current focus - and that is food. This as I will try and show may be the fourth major phase of the Chinese revolution.



So let me get back to the real story. China has shown itself to be particular skilful at adopting external technology - but sometimes they get sold a dud - this is particularly true in agricultural technology.



The more developed Eastern states have adopted the worst practices of Western agriculture.

I see soil which has been productive for thousands of years being destroyed by the excess application of chemical fertilisers - particularly acidic nitrogen rich urea - coupled with the widespread adoption of the rotary tiller which kills of any soil biology which may happen to survive the chemical attack.

The net result is soil which annually become harder and less fertile requiring yet another step down the more fertiliser and tilling path.

Equally as bad is the adoption of American style factory farming like mega feed lots.

The adoption of American style food is leading to a health crisis with China already suffering from a major diabetic crisis. You only have to look at the podgy kids coming out of school to realise that this is only the beginning of something that will end up massive.

Hence my trip to Yunnan where remote villages still practise traditional farming.

There are many puzzles surrounding Chinese food - how can they eat so much and remain slim yet still have the world's worst diabetes crisis? But let me start by giving my experiences of eating in China.

## Chinese restaurants and food



Many of us will have experienced the superb food in the top class restaurants in the centre of Melbourne and Sydney. China has these restaurants too with an even wider range of food flavours.

The Chinese visit these too but limited to special occasions like wedding, births, visiting cousins and Fridays and Saturdays. (And Mondays to celebrate the beginning of the

week and Wednesdays to celebrate the middle of the week).



But let me not exaggerate - Chinese will eat at home or at what I call street restaurants. Here the food is not in the same class as the top notch restaurants and tends to be fatty or have a lot of carbohydrates. There is an enormous range of foods some Western style others from minorities.

As we moved away from the city we found many farmer's restaurants. Farmers are generally poor and seek to increase their income by running a restaurant. They typically have a display of produce where you select what you want and they cook it right in front of you.

In the mountains we found what they called forest food. Virtually every bit of land is used in China but in mountainous Yunnan there are areas which even the Chinese cannot cultivate

so there are large areas of native forest. Typically, a local family will go up the mountains and collect wild edible plants which they will offer in their basic restaurant.

## Kunming and the Southern Plateau

We (that's me, my wife and Chinese Son) flew into Kunming - the capital of Yunnan - picked up a hire car and headed South towards the Vietnamese border.

At night we would stay in a local hotel and go out for dinner at a local restaurant often going out of town to a farmer's restaurant.

It is a feature of China that where you go with a family you meet up with cousins so at most meals there were a dozen or so of us. As my interest was to work out how the Chinese stay so slim this gave me an opportunity to study their eating habits and body physiques. (Brother means close friend or brother of mistress, cousin means any friendly Chinese or someone who has lent you money, the normal source of finance in China)



When I first came to China over thirty years ago the Chinese were virtually all short and slim (less politely scrawny). How things have changed - there is now an enormous range of body types. You see kids coming out of school who are seriously tall and well build, others still short and slim while others are just plain fat.



Old people remain short and slim while the middle aged people fall into two clear categories. They are either slim or have a tendency towards a pot belly but the fat is localised as they do not have the fat legs and arms of typical overweight westerners.



As I sat around the various meal tables I just could not believe how much food they ate - there would be a table full of food which was topped up with fresh courses throughout the meal - yet somehow they managed to scoff the lot - an incredible feat.

At one of these meal there were three middle aged ladies - two had a figures that western ladies would kill for - the third was distinctly plump. Yet - and I watched closely they all ate the same huge amount of food - and drank volumes of beer and that dreaded brew - rice wine.

For those not familiar with rice wine it is the liquid they put into aging VW beetles which enables them to outperform the latest Porsche.

To drink it in a normal way results in your mouth going numb and your lips falling off. The Chinese have perfected the technique of putting their head backwards and tipping it straight down the throat without physical contact.

Despite this outrageous way of eating and drinking half the population remain slim. How?

## Up the mountain

At long last it was time to go up the mountain. Our electronic navigator took us to some minor back street - totally non-descript which left the town and started to climb - and climb and climb. The road (if that is what you want to call it) was cut into the side of the mountain with vertigo inducing drops on one side and cliffs which seemed to be in the act of crumbling in real time on the other.



It was too steep for any form of habitation or cultivation but after four hundred years (that's what it felt like anyway - I have a bit of a problem with vertigo - apparently unheard of in China) we arrived in what was a significant town on the marginally flatter summit.

It was clearly a very old and poor town with none of the atmosphere or the prosperous Chinese town we had left behind below and was I am told one of the minority towns.

I imagined I was in the land of Conan Doyle's Lost World - certainly it had the unspoiled agriculture I had come to gawk at - but a bit light on dinosaurs. They spoke their local dialect with little mandarin but I managed to get one word sorted out when I asked about the fertilisers they were using. That word was toilet. I have no further details.



I was able to watch people (largely women) working the land and definitely no rotary cultivators - just picks and shovels.

The soil was beautiful - full of organic matter and although I had no way of testing for nutrients I had no doubt of its quality straight from the volcanic mountain and was continuously being reinforced by the somewhat alarming habit of rocks cascading down the slope. May be unnerving but nutritious.

This is what I had come to see - now to look at the fit and healthy people.

This is not what I had come to see - they were fat - may be not fat by Bundaberg standards but significantly fatter than the people from the more civilised plains below. True it was still largely tummy fat but still fat.



The only person I saw on this trip who I would call obese e.g. fat all over with fat legs and arms was in this remote mountain town with what could well be the amongst the most fertile soil and natural healthy diet in the world.

Now I have been writing about the benefits of a mineral and nutrient rich diet from naturally grown plants as long as I have been studying soil and food so for me this was the psychological equivalent of Bill Clinton being caught behind the bike shed with Monica Lewinski with bits of him being where they shouldn't be.

Time for a rethink about everything I have said.



But in China there is a saying 'This is China' which sound a bit of nonsense but really means never be surprised by what you find in China because as sure as sure it is not what you were expecting.

And sure enough there was a friend of a cousin of a friend in this remote village who invited us for a home cooked dinner.

The food was - as expected local and natural - even to the chicken's head in the soup which is a Chinese tradition I still have to get used to - particularly as I think it was the one that greeted us on the door step when we arrived.

I was racking my brain examining the food placed in front of me which seemed the essence of a healthy diet - trying to work out where I had gone wrong in my analysis of diet and health when the answer appeared in front of me.



No I had not had some inspiration which was going to revolutionise the science of diet and health - it was a can of drink. It was not Coca-Cola but some Chinese version of the same but with a picture of a banana on the outside. It was certainly sweet and fizzy just like coke. And then came the ice- cream.

I have learned never to be surprised about anything that happens in China.

I had no idea how to react when I found they were using iPhone 4 up here in the remote village. Should I be shocked that they were still using 4 when in fashion conscious Shenzhen no-one would be seen dead not using an iPhone 6 or should be I be shocked that way up here they had reception at all.

But I had more to puzzle on.

Back home where I live near Bundaberg - which is a major centre for horticultural production with a good climate and soil and local produce in the market - there is an awful lot of seriously fat people - while in wet and windy Melbourne people are without doubt much slimmer.

But I see the same picture up here with almost idyllic conditions for food production yet people are demonstrably fatter than in Shenzhen.

This just adds to the puzzle of why Chinese people eat so much and are generally much slimmer than in Australia but suffer worse from diabetes which is generally thought of as a fat person's decease.

Time to flick through the literature again.

## The sad history of diet and health

At one time shortly after the second world war the prevailing orthodoxy was that fat was bad and must be avoided at all costs.



With a modern day view point some of the recommendation were remarkable - avoid milk and butter and use margarine and vegetable cooking oil instead. These fats - the trans fats are now considered the real demon in the health story.

Then the view changed - not all fats were bad and some were actually essential for health.

Sugar was then elevated to be the bogie man and that soon spread to carbohydrates which were quickly turned into glucose and we were all lectured on the glycaemic index.



Next cab of the rank was the idea that sugar contained glucose and fructose. Glucose was essential to provide us with energy while fructose was the baddy and could only be broken down by our liver which became overloaded with fructose and other toxins so we were prone to diabetes.

This lead to an assault on the lack of minerals and vitamins in processed food (I think correctly but only part of the story).



Still focused simply on what we eat was the calorie war. If you eat more calories than you use up, then you get fat.

This was promoted along with the laws of thermodynamics that energy must be conserved. This may have sounded logical but no one seemed to have done the calculation on how much energy we actually eat and use. Any first year engineering student would see that we have far more energy going into our bodies than we use up.

Despite the faulty maths the calorie theory lives on but was soon replaced by the hormone theory - that our hormones decide whether the energy is stored as fat or discarded. At least that recognised what any three-year-old knows - that we poop and pee which gets rid of energy.

The latest technology is focused on gut biology which says that our gut biome controls the hormones which controls the fat - to store or not to store.

Gut biology seems the most promising line of research and explains many of the idiosyncrasies in the health fields - in particular why there is so much variation between people.

Some far-out thinkers say that our psychology determines whether we get fat or not - and there is some evidence that stress does indeed lead to putting on weight.



## Self-experimentation

As I hop back between Australia and China I am in a particularly fortunate position for self-experimentation.



With hindsight I have been a bit too focused on the chemistry of soils and food and my developments in soil have focused on providing the micro nutrients essential for health - and that required a healthy soil biology.

My gawking in China has shown me that while these micro-nutrients are essential for health they are not sufficient - we need the gut biology.

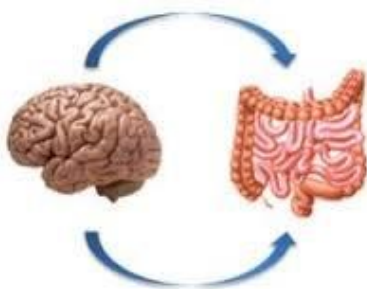
I have been very active in looking at soil biology - it now seems that I need to do more work on how the right soil biology can be grown and transferred to the human body to influence our gut biom.

The explanation for the diabetes and weight link is that that being fat does not cause diabetes - they are both come from the same cause of excess load on the liver so they may correlate but diabetes is not caused by being fat.

This state of confusion is stoked by the processed food industry (the world's largest industry) who have learned much of the nastier side of public manipulation from the tobacco industry.

So what do I think and why should I care anyway? I care because of the massive damage being done by the processed food industry to our community's health.

And what do I think is the 'right' answer to the diet and health riddle? It takes a two minutes' walk from my apartment in Shenzhen and am confronted by variety of body shapes and sizes. This makes me highly suspicious of the one size fits all theories of the dietary science. (Although I do think that genetics are often used to cover up for a lack of understanding).



But I do think there is overwhelming evidence for the gut theories but I have yet to see the pragmatic technology for us as individuals to control our own gut biology. This is my current project.

But also I see the need for self-experimentation. During this trip I have been exposed to a variety of foods both in variety and quantity. It may seem a little weak on my part but there is a social connection when travelling in China so it has been virtually impossible to control my diet but I have been able to monitor both my weight and appetite as I have travelled around.

The results were surprising. For the first three or so days I was a total glutton - eating all the fatty, meaty, sweet and sour food put in front of me. Result I put on over three kilograms. After that I reached a block and just could not eat any more food and my weight dropped back to its normal level.

This also give me the chance to finish on what I consider the ultimate Chinese invention - talking food. Chinese restaurants are noisy places so not many people have practical experience of this rather subtle technology. But I have heard it in action.

Everyone else is talking nineteen to the dozen as happens in China - they talk too fast for me to get more than the stray word but on the table in front of me is this plate of talking goodies.



'Look at me they say - don't I look good and tasty - did you know that they are going to feed me to the pigs tomorrow - you wouldn't like that to happen to me would you? You have had a bite of everything else on the table but I am the tastiest of them all. You don't have to eat all of me - just

take one bite and see how good a really taste - after all this is the last chance to taste my types in the whole of your life - go on - just one bite - they are all busy talking and no one will notice.'

You have got to hand it to the inventive Chinese - talking goodies is the ultimate innovation.

## Having fun



I hope you have enjoyed this not to accurate account of life in China but I will soon be back in Australia where I will write up more about how to make soils which will make us healthy - and I will be very serious and scientific - promise (but remember I am still in China doing what the Chinese do - apart from drinking that gut rotting rice wine.)

But maybe I can close on a serious note. The current number of people from diabetes in China is estimated at 150 million and increasing (depending on estimates) at between 3 and 4.5 million per annum. The costs - personal and financial - are staggering.

If Australia were actually looking for an innovation project to cooperate with China this would be it. Much as a hate to admit it this is an area where the Chicago school of economic rationalism may actually agree with me (about as damming as dating Hitler's granddaughter if he had one).



There are many problems to resolve - for example why is one identical twin living in the same household fatter than the other, why thirty years ago were more people skinny but now half are fat with the other half still skinny.

A few ladies have asked me how they can put on weight - they tell me they force themselves to eat vast quantities of food but just can't put on weight. So many things we just don't understand.



But China is already proactive - I was surprised to see a street clinic in a small town making random tests for diabetes from passers-by. Food is the religion of China and there is an obsession with clean and healthy food.

Australia is a leader in sustainable and clean agriculture which is widely appreciated in China (my pilgrim to China is to fill any spare space in my suitcase with Australian honey and milk powder. What an opportunity for Australia to become a socially responsible innovator - or will we blow it?