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Report on ANZMRC Conference held at Mandurah W.A. 3rd - 6th September 2010

About 200 people from UK, Thailand, New Zealand and Australia attended the conference in magnificent surroundings at Mandurah from Friday the 3rd to Monday 6th September. It was a bit disappointing to see that only 3 people represented Queensland which has a far greater population than NZ who sent 25 people. There were also three people from Thailand. A point of interest: there are 12 research lodges in NZ and 11 in Australia!!!

On Friday afternoon there was an ANZMRC committee meeting and Friday night there was a tyled WA LoR meeting. Attending this meeting were some 100 masons. Also there were 20 grand officers led by the Grand Master. There were six District Grand officers from the WA district of the Grand Lodge of Scotland and many other masons from all over.

This was followed by the official opening and dinner which was well done and most enjoyable and attended by 183 people. At that dinner RW Bro Arthur Hartley, who lives in Mandurah and has been a Kellerman lecturer, was presented with an 80year jewel, he is 104 years old. In response he gave a speech of gratitude and a short talk on his history followed by him playing a harmonica to which all responded well. A magnificent man.

WorBro Yasha Beresiner then gave a presentation on 'Jack the Ripper" ...a Freemason??? This also was well received.

Lectures started on Saturday and they are contained in the conference proceedings.

Saturday night was the conference banquet which was a casual dinner with the bush band Mucky-Duck entertaining all in all a good night. I might add that the Grand Master and his wife shared the table I was on. I have been told that the secret to the success of this conference was sponsors, which had enabled the committee to finance the function. Sponsorship from the Grand Lodge of several thousand dollars and from others enabled the committee to do the work.

Lectures continued on Sunday and I was very pleased that our lecture was well received and generated quite a lot of discussion with the 59 Masons who attended along with several ladies. In the vote of thanks I was accused of courage in presenting the subject.

Sunday we went to Grand Office to attend the opening of the Grand Library hosted by the Grand Master.

The organising committee had supplied bus transport from the accommodation places to the conference venue which was the Lodge rooms of the Mandurah Lodge This can only be described as magnificent. The Lodge room can hold 200 masons and they have used modern technology. The tracing boards are on the wall high above the Senior Deacon and are opened and closed by remote control from the Sec desk.

When giving a tracing board lecture, a cloth tracing board about 20ft by 10 ft is rolled out over the tessellated pavement.

Lectures continued on the Monday and this was followed by the ANZMRC biennial General meeting. I will report on this at a later date.

Harvey Lovewell. Kellerman Lecturer for Queensland 2010

SERENDIPITY AND THE RUTHWELL CROSS

by

Wor. Bro. Joseph A J Lynd

Serendipity is defined in the Oxford Australian dictionary as '*the faculty of making happy and unexpected discoveries by accident'*. It was coined by the British politician Horace Walpole in1754, from the Persian fairytale "The Three Princes of Serendip" (now known as Sri Lanka), in which the heroes possess this faculty. I was fortunate enough to experience serendipity myself, when I was in the British Isles in the latter part of 2009. This serendipity is the foundation of the story on which this short paper is based.

While the main purpose of my visit was to see family in Northern Ireland, I had a few 'Masonic duties' to attend to on the mainland. I took the high speed ferry (the largest catamaran hull ferry in the world) across from Belfast to Stranraer in Scotland and picked up a hire car. My intention was to meet up with a Supreme Council member of the A&ASR for Scotland, who had

previously travelled from his home in Ayr to attend the Centenary celebrations of my Rose Croix Chapter in Cairns and see me installed as the 100th MWS. Next I wanted to visit Roslyn Chapel just outside Edinburgh. The other aim was to stay a few days with a member of my Craft Lodge and Royal Arch Chapter in Cairns, who had returned to Bognor Regis in the south of England, after living several years in Far North Queensland, but who still retained his Australian membership.

I achieved my three goals without any major problems, including the nightmare of driving the length of England on their motorway system! It was on the way back from Bognor Regis to catch the high speed ferry back to Belfast, that I made my fortunate discovery. I had just spent the night at Gretna Green, on the Scotland England border. Gretna is famous as the place where eloping couples got married over the anvil in the local blacksmith's shop. After scraping the ice from my windscreen in the minus 3ºC frost, I headed off for the leisurely 140 km. drive along the A75, on the northern shore of the beautiful Solway Firth, to catch the ferry at Stranraer in mid-afternoon.

My plan was to visit the town of Dumfries on the way to Stranraer. After all Brother Robert Burns was buried there and his former house was now a museum dedicated to the life of Scotland's famous bard and Freemason. This was particularly important to me as 2009 was the 250th anniversary of his birth. Later in the day I did have time to visit Burns's House and also his Mausoleum in the grounds of St Michael's Church. Burns had died at Dumfries in1796 and had been originally buried in a corner of the churchyard. In1815 his body was exhumed and placed in a gleaming white mausoleum along with the body of his wife Jean Armour.

This Mausoleum is in another part of the churchyard close to where the Covenanter graves and memorial are situated.

Getting back to the main story, after about 30 minutes along the A75, I noticed a sign with the words Ruthwell Cross on it. The sign was of a type that indicated an historic building, monument or site and pointed to a rather plain looking (as most of them are), Church of Scotland church or in the Lowland Scots dialect, kirk.

Another tourist from England had just arrived before me and was walking back to open the door of the church with the key he had just obtained from the adjacent Manse, having followed the instructions on a sign beside the church door.

The first impression of the Ruthwell Cross is of its massive size. It towers upwards behind the altar for five and a half metres and to accommodate its height in the purpose built extension, it is set in a stone-lined excavation two metres below floor level. The Cross itself looked very similar to the Celtic Crosses, which are common in my homeland Ireland. However the information plaque in front of it, although lacking any detail, did state that it was in fact, Anglo-Saxon and from the 8th century, at a time when the area around Ruthwell was part of the kingdom of Northumbria. It is now of course part of modern Scotland.

There was something unusual about the Cross that caught my eye. There were beautifully carved biblical scenes adorning the limbs of the Cross and these seemed well worn and consistent with an object perhaps 1300 years old. However, where the limbs of the Cross met, there was a sharply carved and relatively unworn equilateral triangle in relief, which was inside an equally unworn carved circle. I had seen images of many contemporary Celtic Crosses, as well as in reality in Ireland, but I had never seen such a symbol. It also seemed an unlikely symbol for Anglo-Saxon culture, from a time historians describe as the Dark Ages.

The symbolism of the equilateral triangle within a circle, however, was well known to me for another reason. It was associated, not only with Freemasonry, but to a specific form, known as Royal Arch or 'Red' Freemasonry, as opposed to 'Blue' or Craft Freemasonry. Although many Masonic bodies have bestowed on themselves considerable antiquity, even going back to Biblical or

Ancient Egyptian times, I thought it highly unlikely that Royal Arch Freemasonry existed in 8th century Northumbria! Although it certainly would have enhanced the prestige of the Order, most Masonic historians date the foundation of Royal Arch Freemasonry to the 18th century. Some of the earliest references to the Royal Arch come from Ireland and there is some speculation that it may have originated there. Perhaps Royal Arch symbolism was prominent in my mind because, just a few days earlier, I had attended, with my father, Golden Pillar Chapter No.156, his Royal Arch Chapter at Crumlin Road Belfast and had been very well received, as I had been 12 years earlier.

I wrote down key facts from the information boards in the church, although these were scanty and somewhat enigmatic, especially in relation to the unusual symbol. One thing I had gleaned however was that a previous Minister of the church in the 19th century, called the Reverend Henry Duncan, was involved in the mystery. I had resolved to use the notes I had taken to do some research into the Reverend Duncan and the Ruthwell Cross when I returned to Australia. I did eventually get round to doing this and the results have been very interesting indeed.

Henry Duncan was born on the 8th October 1774 at Lochrutton near Dumfries. He was educated at Dumfries Academy and later went to St. Andrew's University. He then went south to Liverpool and worked at Heywood's Bank. Three years later he returned to Scotland to take up the call of the Ministry, which appears to have been something of a family tradition. He obtained his clerical licence in 1798 and a year later chose Ruthwell on the Solway Coast, out of three options (including one in the North of Ireland), which had been offered to him. Reverend Duncan, obviously a man interested in social justice, soon after his arrival at Ruthwell, imported flax for local linen spinning and bought grain from Liverpool to provide employment and inexpensive bread in the area.

Perhaps his greatest legacy was that he was able to use his banking experience in England to reorganize the languishing Friendly Society in Ruthwell village. To achieve this he solicited the help of the local landowner, Lord Mansfield. Lord Mansfield was a member of the Murray Clan, whose second home was Scone Palace, where the famous Stone of Destiny once resided. Henry Duncan and Lord Mansfield became close friends and Henry became the Murray family preacher. Some of the Murray families are buried at Ruthwell Church. Lord Mansfield was also persuaded by Reverend Duncan to donate a cottage in which to house the revitalized Friendly Society.

It must be remembered that this was a time of rural poverty, with agricultural worker wages remaining low, while prices had soared following war with

Revolutionary France and the now the Napoleonic Wars. At a time when the average labourers wage was about five pence per day, it required the then princely sum of ten pounds to open an account at any of the established banks. The Reverend Duncan's Ruthwell Friendly Society only required a deposit of six pence. These deposits were placed with the Linen Bank in Dumfries at 5% interest. Friendly Society members got 4½% on their deposits, with the surplus ½% providing a charity fund as well as financing the administration of the Society. In the first year the total savings were £151 but Duncan's concept of a Savings Bank for the working classes soon spread all over the British Isles. Ten years later the sum being saved throughout the whole of the United Kingdom would be over £3 million. The Reverend Henry Duncan's immense contribution is commemorated by the Savings Bank Museum in Ruthwell village, which is well worth a visit, as well as his statue on the former Dumfries Savings Bank building.

So what is this great philanthropist's connection with the Ruthwell Cross? The answer is that the Cross had stood in Ruthwell for nearly 1000 years since Anglo-Saxon times until the 1600's. Then in the17th century a wave of Puritan post-Reformation fervor swept Britain, resulting in the English Civil War and the Interregnum rule of the Lord Protector, Oliver Cromwell. It must be remembered that this area of Lowland Scotland was a stronghold of the Protestant Covenanters, who opposed both Charles I and later the restored Charles II, and that many of them had paid with their lives, as attested by the graves and memorial in St. Michael's churchyard at Dumfries. So when the Puritans introduced the Idolatrous Monument Act in 1642, this resulted in the Ruthwell Cross being taken down and destroyed by being broken into pieces. However the anonymous enforcers of the new law simply buried the pieces of the broken Cross in the church grounds.

Over one and a half centuries later the Reverend Duncan had the remains of the Cross dug up, reassembled and re-erected in a specially built extension behind the altar of his church. However some of the original Cross was missing when it was excavated, namely the part where the four arms of the Cross was joined. Duncan's solution was to have a piece made to fit. This was the part with the equilateral triangle inside a circle! Would the Reverend Duncan have been aware of the significance of the symbol he had chosen for the replacement piece? The answer is an emphatic yes, because it turns out that he was an extremely keen Royal Arch Freemason. The end of the 18th and the beginning of the19th centuries was in the time of the Great Schism of English Freemasonry, which had resulted in the rival Grand Lodges being dubbed the Moderns and the Antients respectively.

The situation of Chapter Masonry in Scotland at the time was therefore rather confusing, as these Chapters were all warranted from England. In England Antients Lodges tended to work Mark, Royal Arch and Knight Templar degrees as part of their ritual, whereas the Lodges of the Moderns did not, and this was the practice traditionally followed in Scotland as well. The minutes of Thistle Lodge No.62 in Dumfries for October 8th 1770 state "*and attest to all men enlightened, that the said Worshipful Brother, after having been examined and found duly qualified as an Entered Apprentice, Fellow Craft, Master and Mark Master Mason, was by us elected Master of the Chair, and then by us elevated to the Sublime Degree of Excellent, Super Excellent and Royal Arch Mason.*"

However in1800 The Grand Lodge of Scotland issued a statement "*prohibiting and discharging its daughters from holding any meetings above the Degree of Master Mason*."

There was no Scottish Grand Chapter at the time and this meant Royal Arch Masons in Scotland had to go seeking for a warrant from somewhere else. The obvious choice was the Antients, but they could be of no help, as they worked these degrees in their Craft Lodges and that had been banned by the Scottish Grand Lodge. So the Scottish Chapters went to a body that was associated with the Moderns Grand Lodge, and which had been set up in1797 by Lord Blaney. It was known as the "*Grand and Royal Chapter of the Royal Arch of Jerusalem."* It was to this body that an application, with the Reverend Duncan's name on it, was made to form a Chapter at Ruthwell. This was granted and in 1812 St. John's Royal Arch Chapter No.165 was consecrated at Ruthwell. There were enough of these Scottish Chapters formed for the appointment of a Grand Superintendent for Scotland, who also had jurisdiction over Cumberland and Berwick in England.

Although it has not been determined to which Craft Lodge Reverend Duncan belonged, it is known that at one time he was Provincial Grand Chaplain for the Province of Dumfries. The scant mention of him in Craft Lodge records compared to Royal Arch suggests that he was more active in the latter than the former. In1839 he became the Moderator of the General Assembly of the Church of Scotland but five years later, following a dispute over the relationship of the Church with the Civil Government, he left the Church of Scotland to join the Free Church. This of course meant he had to leave the church and manse at Ruthwell and move to a new church that was built in the nearby village of Mouswald. Ironically he died back in Ruthwell, in1846, at the age of 72, while holding an evening prayer meeting there.

So I had solved the mystery of the unusual symbol on the Ruthwell Cross and at the same time had found out about the life of a great man. innovative

banker, in these days when bankers throughout the world are not held in high regard, are an inspiration to us all. I would like to think that his Freemasonry and particularly his Royal Arch Freemasonry helped shape his benevolent nature. Thank you, Brother and Companion Reverend Henry Duncan.

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When I have written various papers on Freemasonry and lately on Fundamentalism I have found that when researching other people's work I have had to look at their work critically, as I have found many contradictions in written papers. I have mentioned this in previous papers where it has not been possible for me to conduct original research. This has led me to put together the following.

On thinking critically

Firstly, recognise that **thinking critically does not mean simple criticism**. It means not simply accepting information at face value in a non-critical or non-evaluating way.

The essence of critical thinking centres not on answering questions but on questioning answers, so it involves questioning, probing, analysing, evaluating. In his novel "Sophie's World", the Danish writer Jostein Gaarder notes that: *"The most subversive people are those who ask questions"*.

Remember that **prominence does not equate to importance**. A newspaper may have made its lead story the rumour of a break-up between Britney Spears and her latest boyfriend, but that does not necessarily make it the most important news item that day. Conversely, in 1914 that tiny story about the assassination of an obscure nobleman in some backwater called Sarajevo proved to have rather more repercussions that most readers first appreciated. Try an experiment: one day, buy five or six national newspapers, compare their coverage of the same stories on the same day, and note the different prominence - and the different slant - given to the same stories.

To understand a news item, **try to give some context to the current event**. For instance, if it is reported that a group of Sunnis today attacked a meeting of Shiites in Iraq, three things are needed to make full sense of the report. First, explanation: what is the difference between Sunnis and Shiites and what proportion of the population do

they constitute? Second, history: what is the origin of the division of Sunnis and Shiites in the country and how has the power relationship altered in past years? Third, anticipation: what does the attack mean for future developments such as the formation of a government or the conduct of an election?

Check the source. Who wrote the article or scripted the programme? How knowledgeable is the source? Does the source have a particular interest or 'angle' or prejudice? Is the source known to you by reputation or previous work? In the case of a Web site in particular, it may be difficult to establish the source.

Use different sources. If there is a dispute over the ecological impact of oil exploration, check out the views of the 'green' pressure group and the oil company and other, more independent, sources such as scientists and commentators. If there is a government statement on health expenditure, check out the views of health authorities, doctors and nurses, and independent commentators.

Always prefer prime sources. A personal, eyewitness account is to be preferred to the statement from the politician who was told by a journalist who read it on a news wire which obtained it from a company spokesman who was briefed by a senior manager on the basis of an eyewitness report from a colleague. A newspaper quote from a report may be accurate but, when you obtain and study the report itself, you might find that the quote was selective or unrepresentative of the work as a whole.

Check the date. Generally speaking, the more recent the material, the more accurate it is likely to be and the more useful it is. This is especially the case in changing situations. For instance, something about Russia written after the fall of communism may well have been able to use sources not available in previous decades. In a war situation, even a few days or hours may make a significant difference to the information and perspective available. On the Web, material is frequently undated and one needs to be aware that it could be outdated.

Check the publisher or promoter or who supplies the money. Many newspapers, magazines and television stations have a definite political orientation and can be expected to push a particular 'line' or interpretation. A Government source may be regarded as particularly authoritative or dangerously partial, depending on the circumstances.

A report on the effect of smoking on cancer rates might be regarded with some caution if the underlying research is found to be funded by tobacco companies.

Be especially sceptical about surveys and polls. Who is funding the project; how the questions are chosen, worded and posed; how those questioned are selected and the context in which the questions are put to them; how the statistical analysis is carried out and the statistics are interpreted; how the findings are presented and reported (or misreported) - all these factors can have a massive influence. Remember the questions on the Howard Government plebiscite on Australia as a Republic: it was doomed to fail and I suspect that was the aim of the question design.

Make temporal comparisons. If a company announces that it has increased revenues by 25% in the last three years, look at the rate of growth in revenues in the three previous years.

Make geographical comparisons. If the government claims that it is now spending 10% of Gross Domestic Product on the health service, compare that with the percentage expenditure in other industrialised countries.

Always look for evidence. The Scottish philosopher David Hulme noted that *"A wise man proportions his belief to the evidence"*. Many Americans believe that the attack on the World Trade Center was engineered by Saddam Hussein, while many Arabs believe that it was planned by the Israeli secret service. They can't both be right, but they could both be wrong. What is the evidence? It has been widely reported that millions of Americans believe that they have been abducted by aliens and, in many cases, subjected to sexual experiments (although the most quoted survey was deeply flawed in its methodology and interpretation). They may be right, but again what is the evidence? Are there witnesses or photographs? Are there body marks on the 'victims' or do they have souvenirs from the spaceships?

Be ready to change your mind if the evidence changes. The famous British economist John Maynard Keynes once said: *"When the facts change, I change my mind – what do you do, sir?"*. Before the US invasion of Iraq, many people thought that Iraq possessed weapons of mass destruction based on the then available evidence and the interpretation of it by the intelligence services. Following the invasion

and extensive searches, the evidence changed, but many were reluctant to change their minds.

Always consider alternative explanations. Those who believe that they have been abducted by aliens might have dreamt or fantasized it. The report of a body found in the park could mean a murder or a suicide or a heart attack or old age.

The fall in crime levels could be the result of more police, better detection procedures, social changes or simply new methods of reporting.

Beware of making assumptions. Oscar Wilde is credited with the saying: *"Never assume, as assume makes an ass out of u and me"*. What you do when making an assumption is in fact asking for someone to help you out with something of great difficulty. So, just because a particular source is usually accurate doesn't necessarily make it accurate this time. Just because the facts can be explained by one particular scenario doesn't mean than another scenario isn't possible and maybe even more likely.

Don't jump to conclusions. As Harold Acton a British writer and art patron pointed out: *"Some people take no mental exercise apart from jumping to conclusions"*. Although the currently available facts may suggest a particular conclusion, other conclusions may be possible. Further facts may support an alternative conclusion and even invalidate the original conclusion. Even when this is not the case, it is always helpful to have further, supporting evidence to support the original conclusion.

Remember Occam's Razor [the maxim is named after William of Occam, the philosopher who was probably born at Ockham in Surrey]. When two or more explanations are possible on the basis of the same facts, always prefer the simplest possible explanation, or "the simplest explanation is usually the correct one". Unless there are very good reasons for favouring a more complex - and therefore more unlikely - one. For example, the pyramids in Egypt could have been designed and constructed by the Egyptians living at the time of the pharaohs or they could have been built according to plans brought to earth by aliens. Both explanations would explain the observable phenomena, but Occam's Razor suggests that we should adopt the explanation that requires the fewest assumptions since there is simply no need to make

extra assumptions unless there is good evidence to support them. Or, as the scientist Albert Einstein put it:
"Everything should be made as simple as possible, but not simpler".
Look for cause and effect. When I get up from bed, the sun comes up - but there is obviously no causality. When I go to bed, I feel refreshed - and there clearly is a relationship. Sometimes relationships are not obvious: in the movie "The Truman Show", when the Jim Carey character gets up from bed, the 'sun' does come up in a causal manner because the Ed Harris character ensures that it does.
Be challenging of the seemingly seductive comment "It works". There are two problems here: agreeing a definition of what 'works' means and establishing a cause and effect relationship between action and outcome. If I perform a traditional Indian rain dance in my back garden, it may rain in an hour, a day or a month. Over what period are we going to assume the dance may have an influence? Then, can we reasonably infer causality here? It may be that my neighbour was performing a different, more effective rain dance in his garden; it may be that the rain clouds had been seeded by a specially charted aircraft to ensure good weather for a sports event tomorrow; it may be that I am in Darwin in the monsoon season and it usually rains at this time of day at this time of year.
Be aware that, when observing a situation, the observer can sometimes change the situation. A classic example of this has come to be known as 'the Hawthorne effect', named after the location of a factory in the USA where some studies were conducted in the 1920s. The researchers were trying to establish what change in working conditions would lead to an increase in productivity. To the astonishment of the researchers, they found that *every* change in conditions - and *even* a return to the original conditions - resulted in an increase in production.
They concluded that this was because the workers were being motivated by the interest shown in them by the researchers. A similar situation occurs in experiments to test the efficacy of drugs or medical treatments and, in this case, it is known as 'the placebo response'. A placebo is a 'pill' made of sugar or a 'tonic' containing nothing medicinal which is used with a control group of patients to

compare with another group taking the drug or treatment that is being tested. What researchers have found is that frequently a placebo has a positive effect because the person taking it *believes* it to be efficacious.

Look for 'meaningful' statements. Often politicians and businessmen make statements which are virtually meaningless, such as *"I think that, if we tried harder, we could possibly do somewhat better"* or *"Some improvements in performance might be expected in the fullness of time"*. Much more meaningful sentences - and ones therefore to be preferred - would be something like *"We will reduce recorded crimes of violence by 10% before the next General Election"* or *"If we increase our capital expenditure by 5% annually for the next three years, we should achieve a 25% increase in revenues by the end of the decade"*.

Have at least a basic understanding of statistics. A figure without a context is often meaningless. For instance, it might be reported that this weekend there were 10 deaths on Australian roads. What does this mean? To obtain some context, it would be useful to know the number of deaths for each weekend in the last month, year or decade and more helpfully calculate the average figure for each of those periods. Sometimes, however, the average can be a misleading measure. For example, if there was a major motorway smash-up last weekend or a petrol shortage last month or a particularly severe winter this year, the average for a particular period may be distorted or skewed by an exceptional figure or two. In these circumstances, it is good to know the difference between mean, median and mode. The mean is the arithmetic average of a range of figures; the median is the middle figure in a range of data arranged by value; and the mode is the figure which occurs most frequently in a set of data. Sometimes the median or mode may be a better indicator than the mean by reducing the impact of 'extreme' instances.

'Translate' statistics. So, convert a percentage into an absolute figure. A claim to have increased customers by 100% might simply mean an increase from two to four. Conversely, a 2.5% increase in a nation's economic growth could - in the case, for instance, of the Australia or the USA - mean the availability of billions of more dollars. Similarly, convert absolute numbers into percentages. A politician might claim that expenditure on the health service has increased by $500M which

seems like a massive figure to someone earning $500 a week but, when expressed as a percentage of total expenditure on health, is seen to be proportionately a mere blip in expenditure patterns. Again conversely, it could be that paying a relatively small cash sum monthly into a pension scheme results in a 25% increase in payments in 20 years time.

Make appropriate use of statistics particularly where subjective judgements are likely to dominate. A classic example is the notion of risk where most people have incredibly subjective perceptions. Obviously, crossing a road is risky, because you might be hit by a car. But staying at home is risky too - you might fall down the stairs or electrocute yourself with the toaster or be attacked by an abusive partner. Obviously, travelling by aircraft is risky because occasionally there are crashes and the number involved is usually so large that it is reported in the media. However, driving a car is probably riskier and riding a motorbike even riskier but, since these accidents and deaths are happening everywhere all the time, you don't hear about most of them. *Everything* in life has an *element* of risk -what is necessary is to quantify that risk in terms which make it comparable with other risks and then take rational decisions based on reasonable probabilities of particular outcomes. This may seem a complicated manner of deciding whether to take the train or fly, but it is a technique which can be used in many other situations where emotions can blind sensible decisions, such as deciding whether to use hormone replacement therapy or have a prostrate examination or where to allocate scarce resources in health care.

Be especially cautious of statistics where probability is concerned. Most people with no training in statistical techniques find it very difficult to make an accurate assessment of probability. For instance, consider the tossing of a coin where the result might be heads (H) or tails (T). Which of these three outcomes is the most likely: HHHHH, TTTTT, HTHTH ? The answer is that each of these three options has the same probability because a coin has no memory and each toss of the coin has a 50-50 chance of resulting in a head or a tail. Many people would see the option HTHTH as the more typical, but this would only be true over an infinite number of tosses - not a mere five. Another example would be assessing how many people you would need in a room before it was likely that two of them shared the same birthday. In

this scenario, 'likely' means with over 50% probability. In fact, the answer is only 23 - because we are talking about *any* birthday matching, not one specific birthday. See how one can so easily be misled by probability?

Don't rest on authority. The scientist Albert Einstein once remarked: *"Foolish faith in authority is the worst enemy of truth"*. In the early 1990s, A teacher gave a presentation to a group of Russians using slides in Russian. At one point, he realised that I had been speaking to the wrong slide for the last five minutes. When he asked the audience why no one had told him this, he was advised that in Communist Russia no one challenged the teacher! Just because the management or the government states something, it does not necessarily mean that it is true. This is especially the case where there is a vested interest, so asbestos and cigarette manufacturers both claimed authoritatively for many years that their products were not damaging to health. Study the evidence and make an independent judgment based on the balance of the available evidence.

Closely related to this, **don't necessarily rest on the received wisdom**. Galileo was excommunicated for challenging the Church's view that the sun, the planets and the stars revolved around the earth - but he was right. Today even the most fundamental rule of modern physics - Einstein's insistence that the speed of light is a constant - is being challenged (by a scientist called João Magueijo). Many management styles and political policies are the received wisdom for a time, but frequently deserve to be challenged. The important thing is to marshal the evidence and subject it to review and analysis.

Beware of anecdotes. Two of your friends may have had a bad experience on holiday in India which might be interesting but is unlikely to be conclusive. India is a massive country, it has millions of visitors a year, your friends' experiences might have been years ago or be more to do with the travel company than the country. Check the information on India on the Government web site and read independent travel guides and surveys allowing you to make a more informed and balanced judgment. On the other hand, **trust your instincts**. If something doesn't 'feel' right, even if it is in a newspaper or a television programme, check it out. Strange though it may seem, the media can

make mistakes and corrections rarely achieve the prominence of the original story.

Deconstruct the elements of a work. In the case of a paper or speech, look at the arguments, the evidence, the structure, and the presentation. In the case of a novel, consider the plot, the characterisation and the language. In the case of a film, think about the script, the acting, the direction, the cinematography and the music.

Think about what is *not* there. When invited to respond to material, most people confine their comments or their thinking to what they can see or hear. Sometimes what is not there is just as important. You might want to ask: Why are certain arguments missing? Why have certain sources not been used? Is this the full picture? A political manifesto will inevitably mention achievements but not failures and will often criticise another party's policy or performance but fail to offer a constructive alternative. A company's annual report will put the most favourable possible 'gloss' on activities and not mention at all financial difficulties or threats from competitors. In a job application, a missing period of time could mean a sabbatical travelling around the world or it could mean a sentence in prison.

Learn to think 'out of the box'. Albert Einstein once said that: *"Problems cannot be solved by thinking within the framework in which they were created"*. For instance, you are asked to decide whether a new product should be trialled in Sydney, Melbourne or Cairns. But maybe it should be trialled in all three or in three different locations. Maybe it shouldn't be trialled at all, but launched
straightaway because a competitor is about to launch a similar product. Maybe it shouldn't be trialled at all because it is still an inferior product that needs more development. Maybe the whole discussion is irrelevant because the company is about to be taken over by another company which already has such a product in the marketplace. If you dare, go beyond thinking 'out of the box' to **thinking the 'unthinkable'**. What does this mean? It means considering variations to the most basic of parameters and entertaining the most radical of possibilities. In the last example - trailing a new product - thinking the unthinkable might mean leaving the company, forming your own and marketing a rival product or it might involve recognition that you are disillusioned with such products altogether and want to make a career change. Albert Einstein

once said that: *"If at first an idea doesn't seem crazy, then there is no hope for it"*. As Yosserian in Joseph Heller's iconic novel "Catch-22" concludes: *"Of course it's insane ... That's why it's the only sane thing to do"*.

Try thinking like your competitor. If you are in a competitive situation - even if it is just a discussion or debate, but much more so if it is a business or a sport (or a war!) - put yourself in the mind of your competitor. If you were him or her, what would you do? If he were to think 'out of the box' or even to think the 'unthinkable', what might he do? How would you respond to that? Should you make such a move first? Even if this process of thought does not lead you to adopt a new strategy, it is a useful discipline that will change the way you look at situations and how prepared you will be mentally for the unexpected or unlikely.

Test your thinking on others. Brainstorm your ideas before starting a piece of work. Show drafts of work in progress to colleagues or friends. Welcome corrections, suggestions and constructive criticism. Entertain challenge. Embrace change. Encourage diversity.

Practice critical thinking. Alfred Mander asserted in his book "Logic for the Millions": *"Thinking is skilled work. It is not true that we are naturally endowed with the ability to think clearly and logically - without learning how or without practising"*. The British philosopher Bertrand Russell bemoaned that: *"Many people would die sooner than think; in fact, they do"*, while the British writer George Bernard Shaw quipped: *"Most people don't take the time to think. I made an international reputation for myself by deciding to think twice a week"*.

Keep practising critical thinking. The British politician Barbara Castle once said: *"Think, think, think. It will hurt like hell at first, but you'll get used to it"*.

Don't worry if thinking critically initially confuses you. Life isn't simple and the world is not black and white. As the Greek philosopher Socrates put it: *"Confusion is the beginning of wisdom"*.

Finally, **remember that 'thinking critically' ends in 'why?'** The word 'why?' is the most powerful tool in your mental toolbox. Keep asking 'why?' Why is this person writing this story in this particular newspaper? Why is this politician making this statement now? Why has the author of this paper quoted this source and not that one? Why has he

used a percentage instead of an absolute figure? Why am I asking all these questions?!?