

Valuing history and memory

Ron B. Ward

University of New South Wales
Sydney, Australia

ABSTRACT: The similarities between the two items in the above title make them very useful when facing a decision and action which may follow. The differences between them are quite extreme and choosing which to use can make such decisions difficult. Another feature is the manner in which they affect different people; some rely heavily on one or the other, or a mixture of the two, thereby tending to live in the past. Contrawise, some people live only for the present, and others look persistently forward into the future. So, after this brief exploration of pros and cons, and of human attitudes to them, how may we value history and memory? This paper is a meditative exploration of the two, from the perspective of a retired engineer-educator.

INTRODUCTION

As this paper is a thoughtful exploration about *history* and *memory* many of the examples and illustrations are not given; some can be found, some are general knowledge, and some (this author admits) are from lengthy memory (which may be appropriate to the paper) and have not been found.

Bring together two terms such as those two in the title causes this author to recall lines attributed to the poet Alexander Pope:

*Remembrance and reflection, how allied,
What thin partitions sense from thought divide.*

History and memory, like the two processes in that couplet, are allied, by being records of what has occurred in the past. Their differences come out when we look at definitions.

The old Concise Oxford Dictionary gives *...continuous methodical record of public events*, followed by a lengthy paragraph of many other shades of that. Webster gives a slightly different word-picture: *a narration of facts and events arranged chronologically with their causes and effects*.

Oxford's definition of memory is *...faculty of remembering, this in an individual as good, bad, convenient or accommodating, that retains only what it is to one's interest to remember...* plus more including reference to electronic memory (not relevant here, all we are considering is human memory). And Webster states *...that faculty of the mind by which it retains the knowledge of previous occurrences, facts, thoughts, etc., and recalls them*. The two complement each other, memory is certainly a *faculty of the mind* and equally different people have different levels of that faculty. As an illustration of that faculty, a Dean of Engineering was heard to say *deans just do not retire, they lose their faculties*, a remark which also illustrates the complexity of our English language.

HISTORY

The history we learn in primary and secondary school was about kings and queens and prime ministers, and here in Australia, about explorers. All very interesting but is it useful after the school student has grown up? That is a question never asked in the schools, never even implied, and never answered. Why is it so? The only answer to *that* question, probably, is history has been taught in schools because there is a belief it is a *good thing*, something which shapes the mind, structures the ability to remember other things (such as shopping lists), as well as a view of how society has developed.

But what this author remembers is it was almost entirely about English history, with some Australian items. Other countries did not exist. Later reading led to discovering interesting characters such as Nicola Machiavelli and what went on in Italy during his period, and Sun Tzu's time in China (and how their philosophies cover opposite ends of war and politics), and Pennington's invasion of Japan, and so on.

ENGINEERING HISTORY

Engineering history? Yes, there is such a branch of study, but little documented as such; Cadbury's book is the best-known work of that nature [1]. Here, we have the background behind the design and building of our Sydney Harbour Bridge is fascinating (particularly as this author walked over it on the opening day), though not only for the engineering but also for the politics and economics. If we look at bridges generally there are also the ones crossing the river at New York, a much more difficult task because instead of having rock for foundations they stand on mud. Then there is the Tacoma Bridge, which swayed and rolled in a strong cross-wind and fell down, nicely recorded on film to warn future suspension-bridge builders. The bridge over the Firth of Forth was not a suspension type, but it blew over for different reasons. And so on. These are bits of history civil engineers should know.

There are history items for mechanical engineers, too, with how invention and development and innovation have affected, usually, one hopes, society in a beneficial manner. Cadbury [1] touches on that by describing the building of the Great Eastern in the 1850s, certainly a marvel of mechanical engineering at that time. Consider sea travel: when the first English settlers reached Australia (including a distant ancestor who was on the third fleet, passage paid by the then-government), the voyage took many months, of the order of half a year, in considerable discomfort. At that time, crossing the Atlantic took weeks, the number depending on which way the wind was blowing. When the mass-migration took place from Europe to America, somewhat over a hundred years ago, about a century after Australia's colonisation, steam ships had replaced sailing ships and the trip took only one to two weeks.

The early steam ships had engines passing the steam through single expansion engines, soon after that the triple-expansion engine became the standard, running the high pressure steam down in stages, making more power and using less fuel. By the end of the 1800s that design was a general standard, not only for merchant ships but also for navies, such as the one with *Royal* in its title. In addition, that leads to an interesting and indeed amusing item of engineering history. Through several years, a wealthy industrialist named Parsons had tried to get the Royal Navy interested in his turbine engines, but the Navy was wedded to the triple expansion piston engine and refused to consider change. So Parsons interrupted the proceedings by running his turbine-driven yacht (actually as fairly large vessel) into the Navy's assembly of ships displayed for Queen Victoria, showed off how fast it was, how the fastest Navy destroyer could catch him, and severely embarrassed the Admiralty - which was further embarrassed when the Queen asked questions and required action.

Among the delightful, but as-yet-untaught, engineering histories there is education, not so much in something which happened, but of a warning against what we might term *engineering hubris*. That is, not thinking broadly, openly, nor using imagination to venture into what is unknown but might be. This is what the Navy failed to do when approached by Parsons. Which brings us to Clark's First Law:

When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states something is impossible, he is very probably wrong [2].

Clark gave some delightfully apt illustrations of that, the first being Rutherford's statement in the 1930s that we would never be able to harness the energy locked up in matter [2]. Yet five years after he died, in 1937, the first chain reaction started in Chicago, causing many, no doubt, to wish he had had a longer life. Clark mentions Pickering (an eminent astronomer) who firmly opined after the Wright Brothers were making their first flights, that large, fast-flying aircraft are impossible. Clark also mentions, of all possible persons, an aeronautical engineer who, in 1929, predicted a maximum speed of 130 mph, a maximum range of 600 miles, a payload of 4 tons, and a total weight of 20 tons, all of which had been exceeded five times by the time he died in 1960. We should also note that some time in the last century a distinguished metallurgist remarked in a textbook that nickel had some interesting properties but he saw no commercial value in that metal. He was certainly wrong. Nickel is what makes stainless steel generally rust-resistant, and now, rather than being just a metallurgical curiosity, nickel has a high commercial value.

As a final example of lack of imagination there is the speaker to the Senate Committee (USA) in 1945, who admitted the German V2 existed but believed an inter-continental missile was impossible - now, one of the international concerns is the ICBM, and everyone knows for what those initials stand.

So much for history, particularly engineering history. There is a great deal of it, though, sadly, inadequately documented.

MEMORY

The Webster definition of memory brings up what is known as *oral history*, that is, history recorded in the minds (usually) of elders. There is a sad loss to the next generation if it is not put on paper (as, one might term it, *paper history*), the usual means being to get the older person talking as garrulously as possible, record it on tape (or, these days, CD), then print it out. It is obvious, of course, that the information is lost if the memories are not recorded in some manner.

The memory function of any individual is helped, to some extent, by whatever records are kept and available in whatever comprises the filing cabinet or hard disc in our minds. We remember a few telephone numbers, a few email addresses, a few routes around our cities. There are many strange features of the memory function; one is that recorded information can disappear if it isn't used for some time, another is the lost item can pop back if a hint is given, and we can see similarities between something new and something well-known. All that happens in the human mind, which is the operating system buried in the brain; we know the brain is there as a material, physical, item, but the mind is invisible, only apparent by what it does, sometimes producing memories effortlessly in a flash, sometimes by a strenuous time-consuming dredging.

TIME AND VALUE

Which brings up the question of time, numerically a human construct, based on astronomical observations, and having effects on both history and memory. We cannot change its passage; we are forced to ride with it. An American writer has compared it with a flowing river along which we are carried like twigs thrown in, unable to influence it [3]. One wonders: is that so? Can we do anything with time? Certainly not the past, that is history, not the present which is happening, what about the future? Let us explore that.

We must admit memory is not perfect, nowhere near as near-perfect as recorded history appears to be (but remember it is said that history is written by the victors), and time causes a decay in accuracy of both. Complete loss in many cases of memory-information, progressive distortion and possible final loss of historical information. Records disappear. For example, we have been seeking information on a building erected in a Sydney suburb during the late 1950s, and nothing can be found. There have been changes in Local Government, in ownership of the site, in agencies, and all have contributed to losing information in a mere fifty years. What hope have we of finding out what happened a few centuries ago - in any detail?

So, although neither historical nor memorial records are perfect, they have a value, by keeping us aware of past events, their causes and results, so that we can make some effort to shape the future in a satisfactory manner. Lawyers and judges do that, by using *precedents*, and our system of common law is built on that. Managers in almost all disciplines use something similar by looking at a decision to be made, then thinking back to previous decisions; ...*at such-and-such a time that happened, and I acted that way, and the result was good/indifferent/bad, and this time is similar, so this time I'll act this way...* and on many occasions such a system works. Well, sometimes well, sometimes poorly, sometimes disastrously, but with some management decisions there is no alternative process.

Thus, history and memory can have an effect on the future, by individuals, not only by kings and queens and prime ministers, the stuff of recorded history.

Now to an illustration of the effects of a past-event, well-remembered by an individual (memory, not recorded history), that changed the future. And, in the course of doing that, provided value.

To tell this adequately this author must lapse into use of the first person singular pronoun. Because it is part of personal memory? Or is it history? Perhaps both. Let us proceed.

- In 1946, I started working as an apprentice in a machine-shop factory some miles from home, and finding public transport was slow and required several changes I started travelling by pushbike. The job required attending a trades school at the factory every second week, and in addition I enrolled at the Sydney Technical College in the first year of the mechanical engineering diploma. The double learning load was too much and I failed that first year. The physical effort in riding a pushbike from home to work (five days per week) and from work to college (four afternoons per week) was too much, and late in 1946 I began using a motorbike.
- After the failure in all nearly all exam subjects (pass in one) I decided to finish the trades course, then go back to the college. There is an amusing memory related to that, Harry Reid, a senior apprentice who had finished the college diploma, bet me five pounds I would never go back, but after finishing the trades program at the end of 1948 I did re-enrol, starting stage one all over. Unfortunately, no opportunity came to collect on that wager.
- Therefore, I restarted the college diploma in 1949 and was getting though the subjects reasonably well while working factory hours, travelling home-to-work, to-the-city, to-home, with occasional ventures in other directions,

limited by the part-time education program. During one of those excursions, in September 1949, I met, quite physically, the front fender of a prime mover driven by a man from Melbourne (who was said to have been drinking alcohol for a couple of hours). His city of origin was important because at that time Melbourne drivers made a right turn in a peculiar manner, unlike the Sydney way, and that was one of the causes of the accident, which almost tore off my left leg.

- What followed? Briefly: six weeks in hospital, a month of urgent study, a pass in all those first year subjects, enrolment in stage two diploma, back into hospital for six weeks (which meant dropping out of study), out and back to work for about six weeks, then back into hospital for another six, plaster removed and learning to walk a week or so before restarting second year diploma. The sixteen months September 1949 to February 1951 were a strange mixture of very busy and a hiatus if lost time, then a furious rush of marriage, finishing the ASTC Diploma and life after that.
- I am more than reasonably sure, indeed quite convinced, looking back with the benefit of long-view hindsight, that if I had not had that accident Harry Reid would have won the bet by my not finishing the diploma. I would probably have continued through working in the metal trades, perhaps rising to a supervising position. Furthermore, there would have been no progress through Bachelor of Engineering, Master of Business Administration, and Doctor of Philosophy, there would have been no accumulation of well over a hundred conference and journal papers and three books, and (of course) a profound interest in industrial safety. The injury and its aftermaths had some effect, *did something*, which changed life outlook (?), perception (?), interests (?), whatever it is cannot be defined. September this year, of course, is the sixtieth anniversary of that event which caused creation of a memory and a change of history.

CONCLUSION

Having provided that clearly anecdotal example of how an occurrence in the past caused a change from a probable future to one different, we ask: what does it prove? No more than a shift in the time stream did occur, but it is highly likely that it is only one of millions of similarly-remembered, rarely historically-recorded, cases in which the flowing stream has diverted around an obstruction and found a new path.

The value of history and memory? There is an obvious value in providing life-precedents, analogous to those used in legal arguments, by which we can shape future events.

A valuing process can be applied by observing what use is made of the acquired records, whether on paper (or other media) as history or in the mind as memory, to change the future, preferably by improving it, from what it might have been to something better. It does not suggest causing violent life-episodes, such as the one in September 1949, to create such a memory! But whatever happens and is recorded can, and should, be used to increase value of what becomes future life, as that event did, up to what is now the present. How confusing time can be? Past, present and future combine in the valuing process, the latter two depending on the first.

REFERENCES

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3. Finney, J., *Time and Again*. New York: Simon and Schuster Inc. (1970).