The Australian experience with oak barrels goes back to the earliest days of the industry. Since there were no indigenous oak trees, attempts were made to find substitute woods, but with limited success. But regardless of the wood used, enormous numbers of barrels had to be made for the export trade with the United Kingdom. It is a little-known fact that between 1928 and 1938 inclusive, the U.K. imported more wine from Australia than from France. That most of it sat in barrels in the London docklands steadily deteriorating led to John Fornachon's research into causes of bacterial spoilage (and hence indirectly to the formation of The Australian Wine Research Institute), but had little impact on the pre-war trade.

The current experience with new oak barrels had all of its origins after the Second World War, but not quite as might have been anticipated. The 1951 annual report of the Austrailian Wine Board had this to say:

Experience of cooper and winemakers over a period of two years with oak from France has unfortunately proved that the quality of this timber as received in Australia is quite unsuitable. In view of this, representations have been made for the issue of licences to cooperage firms and winemakers concerned for the importation of American white oak staves and vat timber to meet the urgent requirements of the industry for storage and maturation vessels.

Conversely, Max Schubert made his odyssey to Europe in 1950, and the development of Grange was inextricably linked with the use of new oak hogsheads. His imminaculately detailed report on the trip was a prime source of information (backed up, of course, by interviews with Max) for Huon Hooke's excellent biography Max Schubert Winemaker.

This publication described Schubert seeing wine fermenting in new oak barrels at Osborne's in Jerez, and notes that he was struck by the aroma and flavour the oak imparted. Whether or not that is the case, the first significant commercial use by others was that of Wolf Blass in the latter part of the 1960s. Furthermore, he joined Schubert in using American, rather than French oak.

When the technique was used with the first vintage of Brokenwood in 1973, it was pure serendipity. Tony Aibert, John Beeston and I crushed our first tonne of Shiraz (with our own equipment) at Rothbury Estate, a last-minute diversion because the winery (theoretically a tractor shed) was lacking its roof. The grapes were picked on Saturday morning, and by Monday afternoon the fermentation was largely complete, and we were due to return to Sydney. Gerry Sissingh, the Rothbury winemaker, wanted nothing to do with a tonne of grape must sitting in an open fermenter until the following weekend, so told us to press it and take it to barrel where it would look after itself—which it duly did.

How many other weekend winemakers had already come to the same conclusion is not known, and in truth a number of years elapsed before I realised we had inadvertently stumbled across one of the key components in the Grange process. But what was realised from the word go was that it gave a wine with excellent oak integration and mouth-feel, and no encouragement was needed to adopt it as a standard procedure.

Barrel fermentation is a messy and space-wasteful way of making red wine, and its use in big wineries is limited to super-premium wines (and even then far from universal). Its use in small wineries is suspected to be more common if only because there may be no alternative stainless steel storage tanks.

Speaking as one of the converted, but also looking at it from an international perspective, I am convinced it has been a key component of the supply of rich, smooth, fruit-driven style of top-end Australian red wines. It is equally surprising, but fortunate, that it has taken so long for Australia's international competitors in the New World—and in particular California—to recognise its merit.

The use of new small oak in white winemaking, and equally the re-appraisal of the merits of French oak, should also be examined. Here the chronology is less clear. Robert Mondavi's trips to Burgundy in the 1960s have been known...
about, as is his subsequent ground-breaking trials evaluating the impact of new oak maturation at various temperatures. The Sonoma Cutrer symposium papers made it clear that in fact barrel fermentation of Chardonnay did not pass into general usage until the mid-1980s.

The pioneer of barrel fermentation for Chardonnay in Australia was Murray Tyrrell, but even he did not move to this technique until 1973, having made the first Vat 47 Chardonnay in 1971. Here too, it took a surprisingly long time for barrel fermentation to move into more general usage. When it did so, the patterns of use were roughly similar to those with red wine.

When Mondavi made his first trip to Burgundy and sought answers to the questions of oak type and degree of firing, he failed to get the concrete answers he was seeking. He could well be forgiven for thinking the French were holding out on him, but the reality was that most winemakers believed these were issues for the cooperage they dealt with. A further reason, they reasoned that since they had been buying oak from the same maker for generations, he knew the style of wine they made and it was the cooper's job to supply them with the type of barrel appropriate for that style.

For whatever reason, much of the French oak imported in the early years into both the United States and Australia was Limousin; whatever was or was not known about the choice of oak within France, it was certainly common knowledge that this type of oak was usually loose-grained, coarse, and suited more to cognac, and not to table wine.

However, by the early 1980s Australian winemakers had begun to actively differentiate between Vosges, the various centre oaks (Nevers, Tronçais, Allier and so forth) and the now largely discredited Limousin. With that knowledge in place, more attention was paid to the degree of toast.

Next came an active interest in the mode of drying the oak before coopering: was it kiln-dried or air-dried, and if the latter for two years or three.

This was one of the issues canvassed by on-going oak trials by The Australian Wine Research Institute, which involved the purchase of French and American oak; air-drying parcels in France, America and Australia respectively, and then making the barrels in the country in which the oak had been dried before use. One of the most surprising preliminary outcomes was that the air-drying conditions appeared to be more critical than the country or forest or origin or the degree of toast.

There is an increasing tendency to specify tight-grained oak as the primary requisite, and to leave the choice of forest to the cooperage.

The use of chateau barrels, rather than export barrels, has also become slightly more common, though still accounting for a small percentage of the total. Once again, its usage is restricted to the super-premium or small winery end of the business, and will likely remain so.

At the opposite end of the spectrum, as it were, shaving and refiring has been tried by almost all winemakers, and rejected by most as counter-productive. In its place, high pressure spray balls capable of removing all tartrate deposits are being adopted, as are semi-automatic cleaning lines, by the major companies.

Methods of oak conservation while the barrels are empty in between use are varied. The easy method for red wine is to empty the barrels—typically in June or July—and immediately refill them with new wine which has gone through its malolactic fermentation in tank and been filtered or centrifuged. For good measure, the barrels will probably be turned to two o'clock and not touched until the following June or July. This might be referred to as industrial or commercial red winemaking, although it will give an inherently better—and certainly different—result to that obtained from tank usage of oak chips and/or inner staves of one kind or another.

It can be regarded as a waste of new oak barrels if they were incorporated in such a program. At the very least, red wine should undergo its malolactic fermentation in new oak, and for most styles at least part of its primary fermentation. This assumes that part of the wine will be matured in older oak barrels, in which case integration of the oak flavour is not such an issue, and extended post-fermentation maceration has no down-sides, at least so far as oak is concerned.

Likewise, it has always seemed that the French adage 'old wine, new wood, no good' applies with particular force to white wine, be it Chardonnay, Sauvignon Blanc, Semillon, Chenin Blanc or whatever else.

As to the future, various forces are going to make the choice and use of oak barrels even more important. The veritable tidal wave of grapes from new plantings in Australia (and elsewhere in the New World) is going to make all markets, both export and domestic, into a competitive battle field unlike anything seen in our lifetime.

The link between price and quality is important now, but will become even more important in the future. It may seem a trite statement of the obvious, but Australia will turn the challenge of exponentially increased production into opportunity if it is quality rather than price which sells the wine.

In this context, maximising the value of increasingly expensive new oak barrels and prolonging the life of used barrels will be of prime importance. But it is not for me to prescribe how oak should be chosen and used in the future. I have the view that 'less may be better than more', but acknowledge that the exuberant use of oak has helped launch the Australian battleships of Chardonnay and Shiraz in particular on the wine markets of the world.

What is certain is that the industry will need to be smarter in its choice and use of oak in the future, and precisely the same way that it will need to be more clever in all aspects of grapegrowing and winemaking. Knowledge, and the sharing of knowledge, is the first step in that process.