

Think of the major controversies in contact lenses over the past decade and one UK-based academic is most likely to have been involved. This month, as **Professor Nathan Efron** returns to his native Australia to take up a new post, **Alison Ewbank** looks back on his time in the UK



The entertainer

He started the first major university-based centre for contact lens research consultancy in Europe, has supervised 20 PhD students and established his position as a leading authority on corneal physiology and the effects of contact lens wear on the eye. He is one of the great communicators in contact lens education, having lectured at virtually every meeting around the world, and has served the profession in a variety of roles.

Yet after 16 years in the UK, Professor Nathan Efron remains a controversial figure. Whether reporting the rate of defects in daily disposables or predicting the demise of RGPs, he has often attracted as many critics as admirers. Most recently his comments in the Australian journal *Clinical and Experimental Ophthalmology* on the safety and efficacy of orthokeratology – under the headline ‘The desperate last gasps of rigid contact lenses’ – have angered exponents of the technique.

So as he leaves Manchester to take up a new post as research professor at Queensland University of Technology in Brisbane, what legacy does he leave to contact lens research and practice in the UK? And does he have any regrets about his role in some of the major controversies of recent times?

It was in February 1990 that Efron arrived at UMIST to take up a new chair funded by a donation from Bausch & Lomb. The aim was to establish a centre for contact lens research consultancy in Europe but it soon became clear that this would not work if B&L was the exclusive sponsor. He managed to persuade other major companies to get involved and brought in funding for industrial consulting work, as well as developing the more fundamental research he had conducted in his previous post at the University of Melbourne.

One of his first PhD students in

Manchester was Philip Morgan, who was later to become research manager of Eurolens Research and his closest collaborator, co-authoring more than 40 refereed papers over the past 16 years. This month, Morgan takes over the job of director of the research centre that he helped to found.

To the practitioner, Eurolens Research is probably best known for high-profile publications such as the recent Manchester study of the incidence of keratitis among contact lens wearers and its annual *Trends in contact lens prescribing* reports. For the industry, the centre provides consultancy for clinical trials of new products. But in the research world, it is known for its work in two main areas of basic research: ocular thermography and corneal confocal microscopy.

QUALITY CONTROLLER

Alongside his research interests, Efron has progressed his career in university administration serving three three-year terms: as dean of graduate studies responsible for all undergraduate programmes of all disciplines; as dean of quality, overseeing the quality of educational provision; and, most recently, taking on the additional role of dean of research across the university. He was also head of the Department of Optometry and Vision Sciences from 1992-97.

Returning from a year's sabbatical in Brisbane, in 2001 he was co-opted onto the senior management teams of UMIST and the Victoria University of Manchester in the run-up to the merger of the two institutions to form the University of Manchester. Combining two different cultures and the creation of a new administrative structure, with a more rigid, vertical hierarchy, presented distinct challenges.

Despite these demanding roles, Efron also found time to serve seven years as a council member of the British Contact

Lens Association, becoming president in 1996, and spent nine years as a member of the General Optical Council at a time of major change for the UK profession.

During his first five-year term on the GOC as universities' representative he was involved in the preparation of the OSAC report, initiated by chairman David Burt, while his second term as an elected member has seen the implementation of the report and the re-drafting of the Opticians Act.

Efron observes that many aspects of the OSAC review have been of great benefit to the profession: ‘The new fitness to practise procedures, for instance, take a supportive rather than punitive approach to getting practitioners back on track.’ However, he has also been closely involved in the new regulations governing contact lens supply that have seen lenses become available through supermarkets, a price-cutting war and widespread discontent among the profession.

He argues that the GOC was forced into this situation by internet companies which were flouting the law and it had no alternative but to legislate. In fact, it was Efron's evidence as an expert witness that helped the GOC successfully prosecute online supplier Vision Direct for unsupervised sales of contact lenses in 1998.

Yet some practitioners feel badly let down by the GOC and are unhappy with the watering down of the requirement for supervised sales in the Section 60 changes.

‘I can understand them having that feeling initially but we essentially had our hands tied. We had to allow patients to get their lens supply from wherever they saw fit, as long as there were proper clinical controls to make sure that ocular health was preserved,’ says Efron. ‘It's been a compromise but we've done the best we can to ensure we have checks and balances in place, while still giving patients the option of getting their supplies from elsewhere.

‘These changes are absolutely in the

best interests of the public, although it might be true to say that they're not entirely in the best commercial interests of practitioners. If a contact lens practitioner really has the confidence of patients and is doing a good job, they'll remain loyal irrespective of these legislative changes.'

So what of the recent finding by Stapleton's group that contact lens wearers who buy their lenses over the internet are at a higher risk of microbial keratitis? If this had been known earlier, would it have made the change in legislation less likely?

'I don't think it would have made a difference but it does highlight the importance of the checks and balances that we've put in place – of having a proper prescription, of the supplier ensuring there will be continuing aftercare, and ensuring the sale of contact lenses is under the general direction of a qualified eye care practitioner who understands the concerns.'

ANTIPODEAN APPROACH

Having divided his career between Australia and the UK, Efron is well placed to compare optometry in the two countries. In his view, the Australian profession is at the forefront of contact lens practice, primarily driven by Brien Holden's unit in Sydney, which he describes as the world's leading vision research centre.

'Brien's contribution, together with his colleagues', has been tremendous over the years and that feeds into practice,' he says.

For Efron, the UK is also at the forefront of contact lens developments but for different reasons, partly geographical. 'A dense population in a small land mass benefits from shorter lines of communication and the annual BCLA conference provides a meeting point for all the key figures in industry,' he explains.

UK practitioners tend to grasp the latest developments quickly, an example being daily disposable lenses, which make it a useful test-bed for new products. The influence of the major multiples also has a big effect on the UK market, he adds.

On the other hand, he considers therapeutic practice to be more advanced in Australia, where optometrists gained prescribing rights on a state-by-state basis and have gradually become recognised as healthcare providers. With experience of teaching on both sides of the world, Efron says that optometric education in the two countries is 'very much on a par'. 'Optometry is a research-driven profession, so where there's excellence in research there's going to be excellence in teaching. That's a traditional view but one that I still hold to.'

His role at QUT will initially be to establish a new research direction within an already strong research department, including a confocal microscopy lab to continue with fundamental research into corneal structure and function. At present

he has no plans to set up a major industrial consultancy group there. He hopes to pick up on some of his earlier collaborations as well as setting up new contacts.

COURTING CONTROVERSY

Looking back over some of the more controversial research he has been involved with, Efron strikes an uncharacteristically conciliatory note. He concedes that he may have 'overstated the case to some extent' when he reported a high incidence of edge defects in early daily disposable designs. His justification is that the research highlighted the importance of lens quality and led to improved processes to produce better edge forms.

His prediction five years ago that RGPs would be virtually obsolete by 2010, which infuriated rigid lens manufacturers, was, he maintains, 'misunderstood' in that he was



simply observing a consistent and continuing decline in rigid lens prescribing over 20 years, rather than saying rigid lenses should no longer be fitted. 'This isn't something we should be ashamed of – we should be embracing the new technologies and moving forward,' he insists.

So has the problem been more in his style of delivery rather than content? 'I suppose there's always been something in me of the entertainer – a liking for the stage. I've sometimes put my views over dramatically, in debates at meetings or controversial editorials, but I make no apology for that. It gets people thinking, sets up debates and brings these ideas to the forefront.'

'Although it upsets some people along the way I'd like to think they could take a broader view, embrace the debate and see if we can come up with the right answer. Even if I turn out to be wrong in the end it's been an enjoyable journey going through these discussions.'

He is, however, willing to admit there have been some 'less than constructive' interactions along the way. 'These things are a waste of time, a waste of energy, a waste of resources and an unfortunate distraction. I hope I never get into any other situations

where personal animosities develop out of my controversial proclamations.'

But a recent editorial in *Clinical and Experimental Ophthalmology* suggests that Efron has not toned down his views. Comments that ortho-K and RGP lenses to slow myopic progression are driven by 'a desperate attempt to shore up a failing industry' may result in a cool reception from exponents of the technique when he arrives back in Australia. He goes on to assert that, half-way towards his prediction of the demise of RGPs by 2010, he has no reason to change his opinion.

Efron concedes he has always been sceptical about ortho-K but says his attitude has changed over the past few years. 'I will now accept that you can reverse the myopic effect by about 1.50-2.00D using orthokeratology but the problem is that refraction is reduced by this amount no matter what the refraction is – you've no control over it.'

'Even if you're a 2.00D myope, you still have to wear lenses overnight and the effect regresses during the day.'

'My entire thinking on orthokeratology is summed up by two words: "Why bother?" It made sense in the 1970s when the choice was between PMMA lenses and thick soft lenses that also deprived the cornea of oxygen. These days there are so many developments in lens materials and designs, you can virtually solve any problem with soft lenses and you don't need rigid lenses any more.'

Efron also questions the safety of the technique and says he is alarmed at the number of reports of severe keratitis in patients undergoing orthokeratology. He rejects any argument that a majority of cases have been in children or have resulted from a lack of hygiene and poor patient education in Asian countries.

'A lot of these problems could be related to poor compliance but that's just blaming the victim. That's not the right approach. I believe orthokeratology will be found to be a risk factor for microbial keratitis, although this will be difficult to define scientifically,' he says.

If ortho-K is not the modality that will make contact lenses more successful and bring contact lens wear to more people, what is? Perhaps surprisingly, Efron doesn't anticipate any major advances in future. 'We've almost got to the point where we're not going to have any quantum leaps in contact lenses, although we will still see a stream of incremental improvements such as surfaces that lessen the chance of bacterial infection, and the development of better optics offering aberration control and superior bifocal lenses that really work.'

'Technological developments must and will continue to take place. Research must continue. But what we really need to work on now is convincing the public that contact lenses are safe, comfortable and convenient to wear,' he says.