# Scientific conservatism

*Clin Med JRCPL*
2003;**3**:89–90

I had just been doing some medico-legal work and I was trying to assess objectively the prognosis of a 70-year-old man. He had a non-life-threatening condition but the insurance premium was dependent on his life expectancy. He looked much older than his years. He had a BMI of 20 which was clearly associated with loss of muscle bulk rather than long-standing wiriness. His blood pressure was 154/60. When I next met Charles I mused to him that the two objective measurements, BMI and blood pressure indicated to me that my clinical impression was correct, but were of no value if I used the tables from which life insurance covers and solicitors work, despite hard evidence that low diastolic and high pulse pressure in fact predict mortality in the elderly.

**'I think there are good reasons and bad, but this is a very long-standing problem,' said Charles. 'I remember a friend of mine at Cambridge who had been very well taught at school being bemused by the fact that the Department of Physiology was still using old-fashioned terminology, effectively calling bases *acids*.'**

'How come?' I asked.

**'I don't think it arose from any innate conservatism. Medicine covers several scientific difficulties and inevitably people still tend to think in the way of the time they were taught, which may be decades ago unless they are directly involved in that particular science. As specialisation increases and knowledge develops more rapidly, these problems must be accentuated.'**

'What can be done about it?'

**'The educational activities of doctors should not be confined to the field in which they practise.'**

'Agreed,' I said, 'Clinical tutors could encourage this, but I can see the managers objecting.'

**'They might well,' he replied. 'but they should realise that it is not only in the long-term interest of the profession but also in their own shorter-term interest that their professional staff are as widely educated as possible. Let's return to the original example you gave. Is it intuitively correct that pulse pressure should be a strong predictor of outcome?'**

'Well, when it was realised that hypertension did predict long-term morbidity it was assumed that the average blood pressure might be the best indicator. The quick calculation of one-third of the difference between systolic and diastolic as reflecting the mean effectively puts twice as much weight on the latter. Systolic blood pressure was assumed to be more affected by stressful situations than the diastolic, so where the blood pressure was used prognostically it was logical to take more notice of the diastolic than the systolic.'

**'But the armchair scientist might think that the highest level might produce the damage.'**

'Fair enough,' I said, 'but it has always been recognised that it was difficult to measure blood pressure in at least some individuals in a way that reflected the ongoing risk because of the natural diurnal variation of blood pressure and "white coat hypertension". Nevertheless, I have always had some sympathy with that argument.'

**'But what about when the damage is done? What does the pulse pressure mean for any particular level of average blood pressure?'**

'Other things being equal, it reflects the efficacy of the aorta and great vessels as elastic reservoirs. In other words, a low pulse pressure means a healthy aorta.'

**'I have always wondered why high blood pressure is so important, as it seems to me most people must die with, if not from, a low blood pressure. If the smaller blood vessels are damaged then one will need more pressure to maintain flow to prevent damage and probably diastolic pressure would be more relevant than systolic.'**

'Agreed,' I said, 'and indeed it is now realised that the worst prognostic feature in the elderly, at least with overt heart disease, is a low diastolic blood pressure.'

**'So now armchair medicine agrees with the scientific findings?'**

'Yes,' I said, 'so why haven't the insurance companies changed their tables?'

**'The answer probably lies in the innate conservatism of any large organisation, which is well recognised in a physical context by the captains of large liners and nowadays large aircraft. Also, from what you say, it may well be that with younger people who have not yet got any disease there is still some justification for assuming a disadvantage with a high diastolic pressure.'**

'Yes,' I said, 'but you agree that there are strong reasons for changing the tables in the elderly?'

**'It seems so,' he said, 'and if insurance companies don't, someone will suffer. By the nature of underwriting it might not be themselves, but instead the pocket of a person with a blood pressure of 152/110, who is wrongly assessed as being more at risk than someone with a blood pressure of 196/88, or 152/56.'**

*We agreed that it may take years for anything to change.*

*Coemgenus*

# Shakespeare and syphilis

*The gods are just, and of our pleasant vices*
*Make instruments to plague us.*[1]

Syphilis reached England in 1497 where it became known as the French disease:

*News have I that my Nell is dead i' the spital*
*Of malady of France.*[2]

The name great-pox (as opposed to smallpox) was soon applied:

*A pox o' your bottle!*[3]

Hair loss, one of the most conspicuous symptoms, became known as the French crown:

*BOTTOM: I will discharge it in either your straw-coloured beard, your orange-tawney beard, your purple-in-grain beard, or your French-crown-coloured beard.*

*QUINCE: Some of your French crowns have no hair at all, and then you will play bare-faced.*[4]

*Timons of Athens* teems with references to primary, secondary and tertiary syphilis. There is no more powerful description of the ravages of tertiary syphilis than that uttered by Timon as he urges two prostitutes to go forth and destroy:

*Consumptions sow*
*In hollow bones of man [periostitis]; strike their sharp shins [tabes dorsalis],*
*And mar men's spurring [leg ulcers]. Crack the lawyer's voice [ulceration of the larynx],*
*That he may never more false title plead,*
*Nor sound his quillets [subtleties] shrilly: hoar [cover with blotches] the flamen [priest]*
*That scolds against the quality of flesh*
*And not believes himself; down with the nose [destruction of nasal septum],*
*Down with it flat; take the bridge quite away*
*Of him that, his particular to forsee,*
*Smells from the general weal: make curled-pate ruffians bald [alopecia]*
*And let the unscarred braggarts [uninfected boasters] of war*
*Derive some pain from you.*[5]

Treatment of syphilis relied upon heat and steam treatment with mercury fumes from cinnabar (half quicksilver, half brimstone):

*No; to the spital go,*
*And from the powdering-tub of infamy*
*Fetch forth the lazar kite [diseased woman] of Cressid's kind [prostitute].*[6]

The hot baths may have inadvertently been using hypothermia treatment for syphilis, thereby predating von Jauregg's 'cure' by three hundred years.

## References

1. Shakespeare W. *King Lear*. V.iii.193.
2. Shakespeare W. *King Henry V*. V.i.86
3. Shakespeare W. *The tempest*. III.ii.86
4. Shakespeare W. *Midsummer night's dream*. I.ii.94
5. Shakespeare W. *Timon of Athens*. IV.iii.168
6. Shakespeare W. *King Henry V*. II.i.78

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