For many years we have used systems to classify fractures as an aid to understanding, to allow comparison and to help our clinical practice, applying eponyms to the best known. These admirable aims are rarely achieved and few classifications have become established in day-to-day practice. There are still favourites such as that of Garden for fractures of the neck of the femur or the Gustilo classification for open injuries, but even these have a high incidence of interobserver variation. In truth, there are so many systems for so many injuries that one has to ask if any are truly appropriate.

We must classify injuries, but the system used needs to be comprehensive and applicable to the whole range of trauma. It should be reliable, easily stored and retrievable electronically, and of sound clinical and academic value. How far are we to achieving this? In practice, most surgeons classify occasionally (on courses), a few formally and even fewer have protocols which plan management around a classification system. We all accept, however, that we cannot judge our results without a fair comparison of similar cases and publications today require that injuries have been classified prospectively. Precise classification is mandatory. Our managers and support staff need accurate information in order to recover the appropriate costs for treatment in our hospitals. There is a massive difference between the level of clinical facilities required and the prognosis of and the costs incurred by injuries which are similar in one way but radically different in another. Both the closed low-energy fracture of the tibia and the high-energy open injury with deficient soft tissue or bone can be easily described as a “long bone injury, otherwise unspecified”. Valuable clinical and administrative data are lost within the system unless the injury is accurately and specifically classified by the responsible clinician.

For the most part we continue to describe a fracture in ‘longhand’ with regard to its site, pattern, displacement and complicating features. We then use this to discuss the clinical situation with our colleagues and to plan the care of the patients. The ‘longhand’ method is well established and represents the custom of natural human communication but it easily leads to inaccuracies, especially when eponyms are used which mean different things to different people.

In this issue of the journal (p. 636) there is yet another paper describing the reliability and reproducibility of a number of systems of classification for a specific group of injuries, in this case complex injuries of the distal humerus. The different systems applied are good examples of those which work in different ways. Those described by Riseborough and Radin, and Jupiter and Mehne, represent the structure of most classification systems. In these, a picture of the various patterns of fracture is provided and a best match obtained. This method fits with the single-glance, best-fit system which most of us apply unconsciously, but it also produces inaccuracies since there is a tendency to make the fracture fit the classification. It is intrinsically weak since a wide number of different systems have been developed for each bony area with no consistency between them. While each represents the enthusiasm and hard work of the ‘inventor’, whose name it usually carries, intrinsic differences make these systems inefficient and difficult to remember. Since, however, our natural tendency is to make a snapshot recognition of the items around us these systems remain in common usage. The alternative is the comprehensive system from AO, which is structured to build up in steps from the bone to the segment to the detailed pattern of the fracture. At first glance it is less user-friendly but becomes more familiar with use and has the advantage that it is consistent and equally referable to all areas of the skeleton. As an alphanumeric system it is also appropriate for the recording and analysis of data.

This paper shows exactly what would be expected from an analysis of the nature of the systems of classification tested. The Riseborough and Radin system provides constraints since it is not comprehensive; half of the fractures in this study were not classifiable. The Jupiter and Mehne and the full AO system showed only fair agreement between observers, while at lower levels, to type and group only, the AO system produced “moderate or substantial” agreement. This finding corresponds to other similar analyses of the comprehensive system in which attempts to classify down to finer detail are associated with a reduction
in accuracy. I believe that this paper supports the use of the AO system. It shows that the essential elements of this injury are reliably classified from the initial radiograph. More detailed classification is not needed for clinical decision-making and can only be provided after further investigation. Sceptics will say that reliability was worse beyond this point, but this is not really surprising. Trauma surgeons know the difficulties in interpreting initial radiographs which are often taken in less than ideal circumstances. Few would accept the first film, which was used for the analysis in this paper, for definitive planning of treatment before operation especially in this pattern of fractures. It is often necessary to take a film on traction under anaesthesia before surgery. It is likely that full classification cannot be reliably made until this step has been taken. Indeed, in many fractures detailed scanning or operative exposure may be required to clarify fully the details of the injury.

It is clear that as we enter the next millennium and the true age of the computer a logical structured system for the classification of fractures must be used. With minor modifications this system has already been adopted by the Orthopaedic Trauma Association as the standard to be used in all submissions for its meetings and by the Journal of Orthopaedic Trauma for all publications. The Journal of Bone and Joint Surgery should consider embracing this practice.

References