

Editorial

These are particularly *interesting times* for scientific journals, an observation that will certainly not surprise those who are on library committees or IT policy groups, or maintaining data archives or sourcing literature from the web. The changes taking place in these fields impact directly on the technical and financial viability of publishing. The journals of scientific learned societies such as the IUCr are not insulated from these changes. Indeed, strict adherence to professional standards might be said to make publishing less adaptable to rapid change and therefore more fragile. Yet resilience is the essence of these times, and journals have to balance the changing needs of a discipline and a publishing technology which is evolving rapidly.

Section C is facing these challenges in several ways. It recognizes, for example, that there is an increased interest in physical and chemical data supporting structural studies, and the 1999 *Notes for Authors* specifically encourages the publication of such data. It is also striving to maintain its other fundamental goals of quality structural studies, rapid publication and low charges through improved submission, editorial and delivery approaches. In the past year there has been a major initiative with the new automatic validation software. This has effectively shifted the primary responsibility for the checking of data submitted for publication from the editors to the authors. This is a crucial step towards more efficient electronic submission and editorial processes.

Automatic data validation is not the thin end of a wedge for a *brave new world of robotic review*. Co-editors and referees play a pivotal role in the review, with data validation filtering out problem submissions. This speeds up publication and reduces journal costs. Automatic validation is not meant to be a precise arbiter of data quality or correctness, only an efficient tool for measuring compliance with a set of data rules. These 'rules' were set in 1996, when the *Section C* Co-editors defined minimum criteria for the publication of structural studies, and these have been embodied in all *Notes for Authors* since, including the 1999 version at the back of this issue. While these criteria provide an explicit and consistent benchmark by which to gauge structural studies, they are not considered universal. Charge-density analyses, for example, will probably require higher precision, whereas the data quality of some difficult studies may be lower. *Section C* allows for the latter category of studies with the new 'validation response' procedures mentioned below.

Notwithstanding the relative comprehensiveness of the new data validation suite in CHECKCIF, it is far from being complete or clever. It is, however, able to

identify the majority of data problems at a higher rate than human counterparts. This isn't surprising for repetitive tests. We are confident that this is a significant advance, both in consistency and veracity, over previous validation approaches. More importantly, automatic validation involves authors in checking prior to submission, making data validation part of the structural study rather than a publication responsibility. As a consequence, several software packages have increased their checking capabilities. And because auto-validation alerts authors to data problems *before* submission, editorial delays are minimized and this benefits the authors and the journal.

Authors are able to contest specific CHECKCIF alerts. This is performed by completing a supplied electronic validation response form (VRF) and returning it in the submitted CIF. Authors should do this *only if* the problem causing the alert cannot be eliminated and there are mitigating scientific arguments to waive the data standards. When a submitted CIF contains a VRF it is assigned to a 'validation Co-editor' who considers if the authors have a case or not. In this way, the VRF provides a fast and consistent mechanism for authors to pre-empt later problems in the editorial process. This approach is working well.

Finally, the provision of a CIF-access electronic mode is an essential part of our new publication initiatives. It is important to future journal options because it relies on the automatic validation, is fast, and involves minimal editorial resources and print costs. If *Section C* is to continue to have low subscription rates, no page charges and free reprints, higher participation in this option is desirable. The *Acta Crystallographica* web services are increasingly popular because they provide rapid and comprehensive access to published structural data which can be easily displayed and modelled. On the other hand, the attractiveness of the printed version of *Section C* depends strongly on the quality of the scientific commentary in full papers. In the future, authors will need to focus their submissions on the respective strengths of these publication modes and choose judiciously between the fast, minimal-text CIF-access electronic and the slower, descriptive full-paper approaches. Both provide for high-quality structure publications but each has its particular benefits and requirements, and authors should make use of the opportunities that this choice provides.

Seasons greetings and best wishes for 1999.

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