

EDITORIAL

A Matter of Words

- *No, Your Majesty, Scotmen do not wear skirts. They wear kilts.*
- *Kilts?*
- *Kilts. A matter of words perhaps, but words are important.*
- *Why are words important?*
- *If you cannot say what you mean, Your Majesty, you will never mean what you say. And a gentleman should always mean what he says.*

[The Last Emperor (Bertolucci/Peploe 1987)]

Scientists, and astronomers in particular, know the value of words and of their meaning, a discipline of discourse failing which no scientific rigor would be possible. The scientific microcosms, if self-consistently well-defined, may however offer interconnecting pitfalls¹, requiring people involved in interdisciplinary collaborations to agree on the vocabulary, thus avoiding embarrassing, time-wasting and occasionally dramatic misunderstandings.

Substantial care has also to be put nowadays in the wording towards large audiences and, in particular, via the Internet and the World-Wide Web. Goldman (1998) explains how some web pages of *Sky & Telescope* had to be re-written. An expression such as “naked eye” had to be replaced by “unaided eye” or “unassisted eye” to avoid filtering by software packages considering that the site was using indecent terms and advising parents to alert the authorities against that threat to their children ...

Astronomy had also to face identity issues regarding the objects it studies. The very simple structure of constellations itself had to get straightened. Because of the non-rigorous delimitation of these in the past, stars could belong to several asterisms. The star with the Arabic name *Al Nath*, aka β Tauri, was also named γ Aurigae in the past. A rigorous definition of 88 constellations covering the whole sky with no overlap took place only

¹A good example is the word *parameter* with differing meanings in mathematics and in the physical sciences.

well into the 20th century (Delporte 1930). For a good review of celestial nomenclature issues and original proposals, see Bishop (2004).

In recent decades, the multiplication of catalogs and of object identifiers of all kinds has made necessary the compilation of synonym tables such as CDS' *Catalogue of Stellar Identifications (CSI)* and database *Simbad*². Integration of all kinds of data through such interconnecting grounds or hubs, ampliation to several dimensions and hierarchization of cosmic objects required continual upgrading towards resources such as *Aladin*³ and towards always more advanced digital research facilities such as those called nowadays *Virtual Observatories (VOs)*.

We already stressed (Heck 2001, 2002/OSA 3) how unfortunate was such a label, though concise and handy to 'sell' the corresponding projects to decision makers/takers. Someone involved in a VO project claimed thereafter that such semantic questions were irrelevant and what mattered was the work actually done. Perhaps acceptable for some, such a stand calls nevertheless for a couple of comments. First, the rigor scientists put in their work should also be applied to the way they phrase it. Second, as more than one advertizer already experienced it, even pleasant and largely adopted buzzwords can backfire; a high-ranking politician of science was commenting recently: "Why should we fund those projects, since they are virtual?"

A Matter of Worlds

But let's go really virtual for a while, in an imaginary place called, say, Weirdland, populated by Weirdies obeying rules edicted from the capital city, Weirdtown.

A pragmatic scientist, visiting the place from an outside world, could not help being surprized by the way the Weirdic scientists were functioning. Here are a few excerpts picked randomly from the visitor's diary:

- none of the scientists in charge of institutions seems to have ever been trained in management, nor in human resources; they often behave in a narrow-minded 'little-chief' spirit; in fact, no difference is made between administrator, director and manager;
- the qualities of chief are rarely a selection criterion for positions of responsibilities; the process is, sometimes through formal elections though, a kind of cooptation where the common denominators are personalities avoiding conflicting situations and not risking to disturb the general routine during their terms;
- the administrative structure and the resulting burden are so heavy that

²<http://simbad.u-strasbg.fr/Simbad>

³<http://aladin.u-strasbg.fr/aladin.gml>



Figure 1. *Les Astronomes* [The Astronomers] (1961), oil on canevas (155×255) by Paul Delvaux (1897-1994). (Private collection, by courtesy)

highly qualified scientists avoid entering the managerial career and therefore end up being regulated by less competent people;

- the personnel selection and promotion processes are most disturbing; under policies of transparency, it appears that many decisions are in fact taken in advance of the commission meetings, that applicants have frequently no possibility for appeal and no opportunity to get themselves heard, that rankings by commissions are sometimes mysteriously rearranged before reaching the official publication of results;
- rules continually change, but not in favor of scientific criteria, getting decreasing weight over time in favor of secondary activities; contributions to the progress of knowledge and outstanding publication records are frequently less rated than confusing notions of ‘service’ including serving in commissions, *i.e.* favoring those very people deciding on promotions;
- ethics issues are largely ignored by Weirdic scientists; ethic charters are rarely heard of, ignored or kept confidential when existing; guidelines to avoid conflicts of interest and collusions seem not to exist; close relatives or people with strong connections are sometimes holding high-ranking positions within the same organizations;
- examples abound where immediate careerist benefit (personal or for

friends) prevails over the long-term interest of the discipline;

- the Weirdic scientific world appears to be disconnected from reality; self-reinforcing projects engulf lavish expenses with apparently no possibility this be questioned by independent bodies;

- creativity, sometimes carried out by individuals from personal money, is discouraged as leading out of the beaten pathes and well-established patterns; in fact, in many instances, strategies appear to be negatively oriented.

These were just a few points from the visitor's diary that was holding many more comments, on publications, on education, on evaluation, etc., on which we may come back in future editorials. Weirddland was a virtual world, but could we say that, in our everyday real life, we have never been wondering one day about one of the situations mentioned above?

They are not new either. In the forewords of his textbooks, Bouasse (1918) was already pointing out shortcomings and inadequacies in the professional deontology, as well as absurdities in astronomy educational policies at the very beginning of the 20th century. Much closer to us, Koestler (1973) set up, on a dramatic background of world conflict threat, a hilarious parody of academic jet-setters attending a conference in a place easily identifiable by European astronomers and invited guests from abroad.

A Matter of Ways

Over the past couple of decades, activities grouped under the label EPO (Education and Public Outreach) have taken a more asserted importance in astronomy. The profession of EPO officer has been increasingly perceived as indispensable and going much beyond the mere distribution of nice pictures.

Two major practical motivations for such an evolution can be identified: (a) the enhanced degree of competition, for public and private funding, between the scientific disciplines, between institutions within a discipline, between groups within an institution, and of course between individuals; (b) the higher awareness of the impact of public support to secure such funding, together with a better integrated concept of return towards the taxpayers. Political authorities have also put more emphasis on the educational mission of scientific organizations.

EPO positions have been created and dedicated EPO offices have been set up, first in the large international and national organizations, then in structures of smaller sizes, getting sometimes the grand public involved through visitor centers occasionally equipped with planetariums⁴.

⁴See for instance the following dedicated chapters in the OSA volumes: Christensen (2003/OSA 4), Christian (2004/OSA 5), Finley (2002/OSA 3), Isbell & Fedele (2003/OSA 4), Mitton (2001/OSA 2), Morison & O'Brien (2005/OSA 6), keeping in mind that the matter has also been tackled in other, more general, contributions.

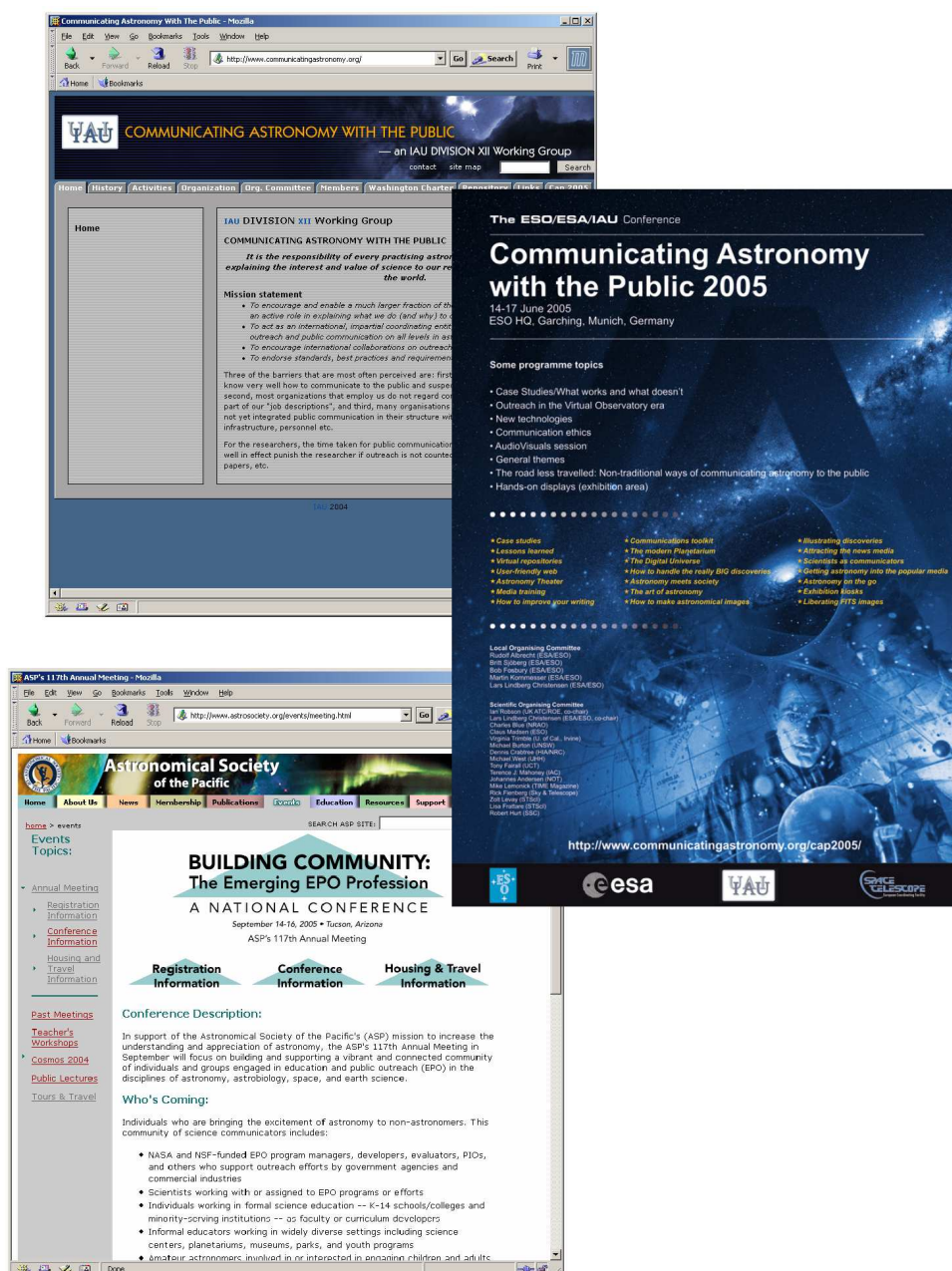


Figure 2. Web pages of the IAU Working Group on *Communicating Astronomy with the Public* (top), the 2005 ESO/ESA/IAU conference on the same theme (middle), and the 2005 ASP annual conference on *The Emerging EPO Profession* (bottom). See text for details and URLs.

Quite naturally, the necessity to share experience and to coordinate efforts, initially scattered, arose subsequently. Books were published (see *e.g.* Heck & Madsen 2003) and conferences were organized: cf. *Communicating Astronomy*⁵, convened in 2002 by the by the Instituto de Astrofísica de Canarias, or *Communicating Astronomy to the Public*⁶, held in 2003 at the US National Academy of Sciences.

The most significant outcome of the latter meeting was the elaboration of a charter⁷ outlining principles of action for individuals and organizations conducting astronomical research and having “a compelling obligation to communicate their results and efforts with the public for the benefit of all.”

A working group (WG) has subsequently been set up by the International Astronomical Union (IAU) on the theme *Communicating Astronomy with the Public*⁸. At the time of writing these lines, two large conferences are scheduled in the upcoming months (Fig. 2): the ESA⁹/ESO¹⁰/IAU Conference on *Communicating Astronomy with the Public*¹¹ (June 2005) and the annual conference of the Astronomical Society of the Pacific (ASP) on the theme *Building Community: The Emerging EPO Profession*¹² (September 2005).

The title of the ASP event describes best the current situation and the lemma of the IAU WG expresses quite well the fundamental EPO mission as perceived these days: “It is the responsibility of every practising astronomer to play some role in explaining the interest and value of science to our real employers, the taxpayers of the world” – a social component that we recurrently advocated.

One step further, another focus has received increasing attention from professional astronomers in even more recent times (Fig. 3): the strategical, organizational and socio-dynamical issues. Until not so long ago (and who knows why), the term “sociology” was carrying a negative connotation in hard-science circles where the only related studies were limited to bibliometric counts. As largely exemplified in the OSA series, other dimensions do exist – and the overall approach has now evolved and matured.

One can already see, or at least hope for, the time when, in turn, a dedicated slot will be devoted too to those activities in our discipline; when young scientists will hear, with the proper semantics of a real world, not only of productivity and impact, but also of ethical issues, of constructive

⁵<http://www.iac.es/proyect/commast/>

⁶<http://www.nrao.edu/ccap/>

⁷http://www.communicatingastronomy.org/washington_charter/charter.final.html

⁸<http://www.communicatingastronomy.org/>

⁹European Space Agency.

¹⁰European Southern Observatory.

¹¹<http://www.communicatingastronomy.org/cap2005/>

¹²<http://www.astrosociety.org/events/meeting.html>

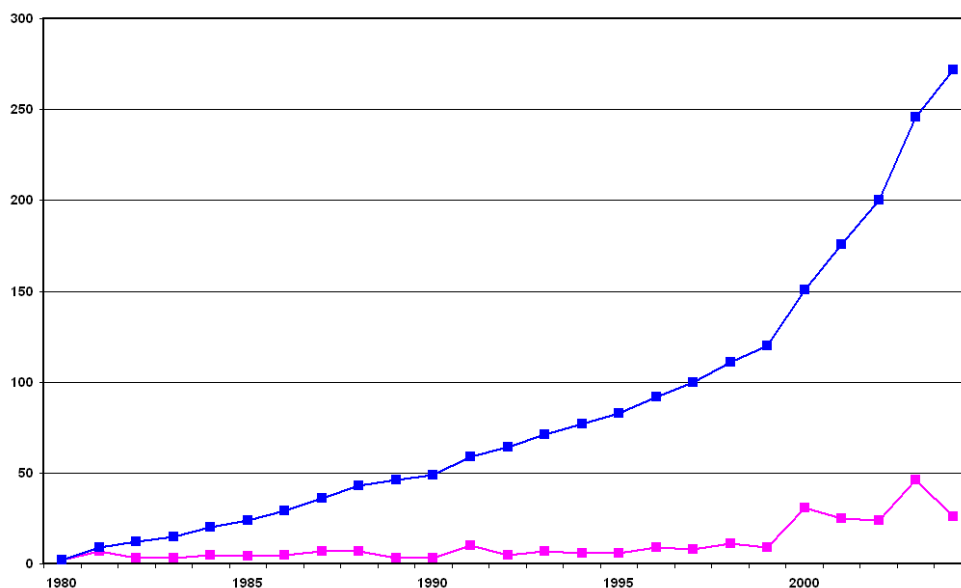


Figure 3. Histogram of the number of papers listed in the bibliographic section at the end of the volume. The top (blue) curve is cumulative. The gradient increase is clearly perceptible as well as the contribution from the OSA series since Year 2000.

management, of long-term strategies, of responsibility and return towards the society at large, of the rôle and position of astronomy towards mankind, not to forget the description of organizational structures and contexts – a range of matters that accomplished scientists themselves, sometimes isolated in crystal spheres, do not apprehend always in the best way.

The OSA Books series

This book is the sixth volume under the title *Organizations and Strategies in Astronomy (OSA)*. The OSA series is intended to cover a large range of fields and themes¹³. In practice, one could say that all aspects of the astronomy-related context and environment are considered in the spirit of sharing specific expertise and lessons learned. The individual volumes are complementing each other, also in synergy with the directories *StarGuides* and databases *StarPages* of organizational and individual data (Heck 2003 & 2004).

Thus this series is a unique medium for scientists and non-scientists (sometimes from outside astronomy) to describe their experience and to

¹³See for instance <http://vizier.u-strasbg.fr/~heck/osabooks.htm>

discuss points on non-purely scientific matters – often of fundamental importance for the efficient conduct of our activities.

This book

This book starts with an essay by J.R. Roy & M. Mountain on the evolving sociology of ground-based optical and infrared astronomy at the start of the 21st century.

Then a group of chapters review the organization of astronomy in various parts of the world:

- in Africa, by P. Martinez,
- in New Zealand, by J. Hearnshaw,
- in Austria, by S. Schindler,

Next, the specific case – in terms of opportunities and operational challenges – of a high-altitude site is discussed by R. Stencel.

The three following chapters deal with the selection of observing time proposals: J.L. Linsky shares his personal experience in various *ad hoc* committees while the procedures for selecting solar and radioastronomical programs are discussed by H. Uitenbroek and R. Schwartz *et al.* for the respective examples of the Dunn Solar Tower (National Solar Observatory, USA) and the Effelsberg 100m radiotelescope (Max-Planck-Institut für Radioastronomie, Germany).

Several contributions then detail evaluation means:

- the Hubble Space Telescope science metrics, by J. Madrid *et al.*,
 - the Science News metrics, by C.A. Christian & G. Davidson,
 - a citation-based measure developed by F. Pearce & D.C. Forbes,
- while H.A. Abt compares citation counts from the Science Citation Index and the NASA Astrophysics Data System.

Next, J.L. Linsky tells us the story of the Letters to the Editor published in the Newsletter of the American Astronomical Society distributed to some 6500 members world-wide¹⁴; J. Hermida offers a panorama of space laws; R. Rebolo reviews the search strategies for exoplanets and H. Rickman describes the initiatives taken by the International Astronomical Union on impact hazards from near-Earth objects.

In the following chapters, E. Schweitzer recalls the services provided to the whole professional community by the French Association of Variable Star Observers (AFOEV) and C.C. Petersen recapitulates the structure and activities of the International Planetarium Society, as well as the challenges it currently faces.

The next three contributions deal with education and public outreach:

- R. Ferlet & C. Pennypacker, on the Hands-On Universe Project;

¹⁴The astronomical professional journals have a much lower circulation!

– I. Morison & T. O’Brien, on the past, present and future EPO activities at Jodrell Bank Observatory (UK);

– A. Cirou, on his multimedia outreach towards French-speaking audiences.

Finally, T. Siegfried & A. Witze provides sound indications on what media people are expecting to report efficiently on our activities.

The book concludes with the updated bibliography of publications relating to socio-astronomy and to the interactions of the astronomy community with society at large.

Acknowledgments

It has been a privilege and a great honor to be given the opportunity of compiling this book and interacting with the various contributors. The quality of the authors, the scope of expertise they cover, the messages they convey make of this book a natural continuation of the previous volumes.

The reader will certainly enjoy as much as I did going through such a variety of well-inspired chapters from so many different horizons, be it also because the contributors have done their best to write in a way that is understandable to readers who are not necessarily hyper-specialized in astronomy while providing specific detailed information and sometimes enlightening ‘lessons learned’ sections.

I am specially grateful to Catherine Cesarsky, Director General of the European Southern Observatory and President-Elect of the International Astronomical Union, for writing the foreword of this book and to the various referees who ensured independent and prompt reading of the contributions.

Finally, it is a very pleasant duty to pay tribute here to the various people at *Springer* who are enthusiastically supporting this series of volumes.

The Editor
Pico de Tres Mares
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References

1. Bertolucci, B. & Peplow, M. 1987, *The Last Emperor*, film, Artisan Entertainment.
2. Bishop, J.E. 2004, How Astronomical Objects are Named, *The Planetarian* **33/3**, 6-24.
3. Bouasse, H. 1918, *Astronomie Théorique et Pratique*, Librairie Delagrave, Paris, xxix + 630 pp.
4. Christensen, L.L. 2003, Practical Popular Communication of Astronomy, in *Organizations and Strategies in Astronomy – Vol. 4*, Kluwer Acad. Publ., Dordrecht, 105-142.
5. Christian, C.A. 2004, The Public Impact of the Hubble Space Telescope: A case Study, in *Organizations and Strategies in Astronomy – Vol. 5*, Kluwer Acad. Publ., Dordrecht, 203-216.

6. Delporte, E. 1930, *Délimitation Scientifique des Constellations (Tables et Cartes)*, Cambridge Univ. Press, 44 pp. + 26 maps.
7. Finley, D.G. 2002, Public Relations for a National Observatory, in *Organizations and Strategies in Astronomy – Vol. 3*, Kluwer Acad. Publ., Dordrecht, 21-34.
8. Goldman, S.J. 1998, Watch Your Language, *Sky & Tel.* **95/3**, 69.
9. Heck, A. 2001, Virtual Observatories or Rather Digital Research Facilities?, *Amer. Astron. Soc. Newsl.* **104**, 2.
10. Heck, A. 2002, Editorial, in *Organizations and Strategies in Astronomy – Vol. 3*, Kluwer Acad. Publ., Dordrecht, 1-10.
11. Heck, A. 2003, From Early Directories to Current Yellow-Page Services, in *Information Handling in Astronomy – Historical Vistas*, Ed. A. Heck, Kluwer Acad. Publ., Dordrecht, 183-205.
12. Heck, A. 2004, *StarGuides Plus – A World-Wide Directory of Organizations in Astronomy and Related Space Sciences*, Kluwer Acad. Publ., Dordrecht, xii + 1140 pp. (ISBN 1-4020-1926-2)
13. Heck, A. & Madsen, C. (Eds) 2003, *Astronomy Communication*, Kluwer Acad. Publ., Dordrecht, x + 226 pp. (ISBN 1-4020-1345-0)
14. Isbell, D. & Fedele, R. 2003, Outreach at Kitt Peak Visitor Center: Techniques for Engaging the Public at a Major Observatory, in *Organizations and Strategies in Astronomy – Vol. 4*, Kluwer Acad. Publ., Dordrecht, 93-104.
15. Koestler, A. 1973, *The Call-Girls: A Tragi-Comedy*, Random House, New York, 167 pp. (ISBN 0-3944-8435-5)
16. Mitton, J. 2001, Working with the Media: The Royal Astronomical Society Experience, in *Organizations and Strategies in Astronomy – Vol. 2*, Kluwer Acad. Publ., Dordrecht, 239-256.
17. Morison, I. & O'Brien, T. 2005, Outreach from the Jodrell Bank Observatory, this volume.