

ON COMMUNICATING

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Fifty years ago the British Broadcasting Corporation chose for its motto "And nation shall speak peace unto nation." The years that followed do not suggest that speech necessarily creates understanding.

This century has seen an explosion of knowledge. In medicine this has changed the mode of practice as well as the treatment. At the turn of the century there were few specialties. Pathology had not developed its subdivisions, radiology was in its infancy, anesthesia was by rag and bottle, and an appendectomy was a major operation. Orthopedic surgeons were a rarity and rehabilitation unknown. Most surgeons operated over the whole spectrum of surgery, with little help except their own knowledge and experience. They had little need to communicate for there were few with whom to commune.

The modern surgeon is a less god-like figure although no less a surgeon. He interprets and coordinates advice and treatment from a team of many specialists.

Any specialized activity, whether it be sport, craft, or profession develops a jargon of its own. This may ease exchange of ideas within a group, but it can be a barrier to the exchange of ideas with others. Indeed, it may be used as a secret language deliberately to exclude outsiders.

At the beginning of the century doctors used as a matter of course the medieval Latin, which is still the language of medicine. Prescriptions written in this language were understood throughout the world. Today few can remember the formula or proper chemical name of the complex drugs in daily use. They are known by some short name, often a trade name, which itself may vary from country to country.

Medical Latin is still commonly used. Much is readily understood by the public. Anesthesia, poliomyelitis, and arthritis, because they are derived from Greco-Latin, are understood internationally. In rehabilitation such terms are common. *Genu recurvatum*, *pes cavus*, *cervical*

spine are understood throughout the world, but there has been a trend to use the vernacular not only for new diseases and devices, but also for old, and this is creating barriers to communication. *Genu valgum* needs no translation into French but "knock knees" does. KBM has meaning for the German prosthetist but needs to be translated to PTS for the English speaking world.

These terms at least have the merit that they are descriptive in their own language. Far worse is the naming of diseases, devices, or procedures after the names of people or places which gives no idea of the pathology or function. "Let us now praise famous men and our fathers which begat us" is a worthy sentiment, but when it becomes ancestor worship it impedes progress. In orthotics there are some 47 named spinal orthoses in current use—names which give no indication of the function. Prosthetics is not yet as bad but is trending that way.

About 25 years ago the engineer added his own confused and confusing language to this medical babel. Energy is variously foot poundals, foot pounds, British thermal units, calories, joules, or ergs. Pressures are millimeters of mercury (at 0 deg. C.), centimeters of water (at 15 deg. C.), atmospheres, pounds per square inch, grams per square centimeter, etc.

The patient with a physical handicap has a disability which needs both medical and engineering understanding. The physician, the engineer, and the prosthetist/orthotist must understand each other if the patient is to benefit from their deliberations.

No branch of medicine could claim a better international exchange of information than prosthetics and orthotics, which now has its own international society in which the many disciplines involved in rehabilitation meet. Goodwill rather than a logical language has promoted mutual respect between the professions—goodwill from many nations with many tongues. Denmark, France, Germany, Britain, to name but a few, have contributed to this international cooperation. Not least has been the American support, particularly from the Veterans Administration and the Department of Health, Education, and Welfare.

International cooperation needs international understanding and therefore some common means of communication. International written "languages" are quite common. Music has a written notation which is understood worldwide. Mathematicians communicate in any language even when they cannot talk to each other, for $2 \times 2 = 4$ whether it is quatre, quatro, vier, or four. Even road signs have become international.

International prosthetics and orthotics has begun to rationalize some of its communications. This means that as individuals we may need to cease using the old familiar language for a new one. It is on the engineering aspects that the first change has been made. At an international meeting held during March 1971 in San Francisco, it was agreed

that in the future prosthetics would use the international metric system. Metrication is not just a matter of using centimeters in place of inches, or liters in place of quarts. It is a logical system developed by the Bureau International des Poids et Mesures, with headquarters in Paris. It is evolved from seven basic units from which all other units are derived. This system, known as SI units (from *Système International*), provides only one unit for any physical measurement. To begin with, those brought up with the old terminology, particularly the engineer, find it confusing, but as a doctor involved in understanding a new field I find it much easier to have pressure, whether on an amputation stump, in the arteries, or car tire, all expressed in the same unit.

This system will not only make interdisciplinary and international communication easier, but will also ease the international exchange of parts which would help with new prosthetic fabrication techniques. To the "old hand" it may seem unnecessary or confusing to begin with when he comes across it, but to the newcomer it will speed his understanding and provide him with an international set of standards.

As yet the old confusing terminology of orthotics remains unchanged. There has been widespread dissatisfaction with this, and to a lesser extent with prosthetic terminology, for a long time. At long last a movement is afoot to improve this.

At the request of the American Orthotic and Prosthetic Association and with the approval of the American Academy of Orthopaedic Surgeons, the Committees on Prosthetic-Orthotic Education and Prosthetics Research and Development of the National Academy of Sciences arranged a Task Force to develop a new system of terminology for prosthetics and orthotics. This task force is supported by the Veterans Administration and the Social and Rehabilitation Service, whose professional members actively participate. This is not the place to describe in detail the system of terminology which is being developed, for there are still some final modifications to be made. The orthotics terminology is being currently assessed in the state of Ohio and is proving generally acceptable.

In orthotics this system eliminates all proper names used to identify orthoses. These are now described firstly by the joints they encompass and then by what the orthoses do to the joints, whether locking, resisting, or assisting movement, etc. Such a terminology requires that the physician shall determine in detail the physical deficit of the patient and what he wishes to apply mechanically to meet that deficiency. The orthotist is then free to meet that prescription from his own professional knowledge and skill.

The system is logical. Experience so far shows that it is easy to learn and use. It has been developed primarily to meet the urgent need in the U.S.A. to clarify nomenclature for teaching, prescription, and

administration. At present it is in English, which is used by many for whom it is not the mother tongue. It could therefore be used by many nations in its present form. It is perhaps too early to organize, but surely not too soon to consider, whether it could not form the basis of a nomenclature with worldwide acceptance.

With an international system of measurements and an internationally accepted terminology, we would then be able to write a prescription for a prosthesis or orthosis which would be understood and met worldwide.

Nation might still not be able to speak unto nation, but the day would then come, and it need not be far away, when in prosthetics and orthotics they could commune with understanding.