



## Notes from a fringe watcher

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## EDITORIAL

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### Notes from a fringe watcher

I am a neurologist, my field of expertise being neuropsychology. For many years, I taught at the physiotherapy school in Milan, and throughout my career I have collaborated with physiotherapists on different research projects. These are my only credentials which may or may not allow me to express my views in this editorial.

Indeed, I have often been stimulated by my physiotherapy students' drive and I have always been puzzled by the gap between their determination and ingenuity and the dearth of sound rehabilitation studies one can glean from the literature. Whence does all their will and talent dissipate? There must be a bug in the system. The debate I would like to launch among the readers of *Physiotherapy Theory and Practice* is, 'why is physiotherapy not (yet) a science?'. In this editorial, I will argue for the need to apply the scientific methods of investigation to rehabilitation techniques of brain-injured patients.

We live in a very credulous world, where Health Trust resources are allocated to questionable remedies; where people light-heartedly spend money on unverified fringe treatments with dubious results; where books explaining how to enhance our skills while sleeping are bestsellers. All too often we have seen a similar attitude in rehabilitation settings, from patients, from therapists and from bureaucrats.

To warrant the term 'rehabilitation', it is necessary to assume that recovery, at least partly, is possible and that it is, at least partly, due to the treatment. Therefore, rehabilitation hypotheses should be theoretically proper and the evaluation of rehabilitation programmes should be carried out in respect of the scientific method relinquishing the current excess of empiricism. Readers used to scientific literature and less acclimatised to clinical practice will probably be surprised by the above remark. It suffices to remind them that the first controlled phar-

macological trial was published only as recently as 1948 (Marshall et al). It should not surprise them that the debate about the value of the scientific method is still hot concerning rehabilitation, a discipline with a much shorter history than medicine.

Most treatments employed in rehabilitation are never evaluated and, when they are, the results are at best ambiguous. This is dangerous because it can lead colleagues from more established disciplines and eventually Health Services to question the value of rehabilitation as a whole. The efficacy of rehabilitation in general is supported by the overwhelming evidence that deficiencies are more probable when it is not provided (Effective Health Care, 1992). However, this is not enough. One has to attempt to link treatments to theories, demonstrate the specificity of a given treatment, analyse its cost-benefit ratio, compare it with other alternative treatments, and falsify its purported efficacy. Moreover, once recovery takes place, it is important to understand its mechanism in order to facilitate it, and to avoid attributing to rehabilitation what is little more than spontaneous recovery due to the passing of time. The advocates of a personalised holistic approach to rehabilitation maintain that due to the heterogeneity of the population at issue, it is impossible to apply the 'scientific method' to the evaluation of rehabilitation programmes. Experimental paradigms based on the single case study approach and alternative statistical packages are now available (for a review, see Riddoch and Lennon, 1991). They should allow us to overcome this difficulty.

The opposite, that is the use of 'scientific evidence' as a blanket to propose new treatments or to back-up old ones, is also a recognised problem. Given the scarcity of rehabilitation studies, physiotherapists are inclined to use an-

ecdotes of alleged positive results to support their preferred therapeutic methods. This bias emerged clearly in the survey carried out by Sackley and Lincoln (1996). This study demonstrated that many British physiotherapists choose a particular rehabilitation approach solely on the basis of their experience, disregarding evidence published in respected scientific journals. There is a difference between 'know' and 'believe' (Baddeley, 1993); reliance upon subjective impressions conforms to the latter.

Suppose, for the sake of argument, that in an alien society all brain-injured patients undergo a treatment known (among the aliens) as kissotherapy. Kissotherapy schools flourish, different kissotherapy techniques are proposed by eminent kissotherapy scholars, conspicuous volumes are published on the topic reporting various anecdotes of more or less miraculous healings thanks to the therapy. Thousands of very willing pupils spread the technique and engage themselves in lengthy hot debates arguing about which kissotherapy treatment is best for the patients. In the absence of valid alternatives, under the pressure of real needs, the (alien) Health Service agrees to fund kissotherapy departments: most of the patients do not complain. Of course, kissotherapists do not agree on evaluating the outcome of their techniques, why should they? It is pretty obvious to them that the therapy works and, even more importantly, it is harmless. Now suppose that for a number of peculiar coincidences, the people appointed to organise the (alien) Health Service are scientifically literate. What would you suggest to them as the most logical action?

Any adequate theory of remediation must sooner or later come to terms with an adequate model of the system directly or indirectly under treatment. To understand the possible flexibility of a system, we should attempt to tackle its complexity. However, the goal of rehabilitation 'is to return a patient to a level of function that approximates to that person's previous level. From a practical point of view, knowing what goes on in the brain is not essential for this endeavour. It is more important to know what procedures may be useful to restore function' (Kolb and Whishaw, 1996, p. 560). Physiotherapy can be a science on its own.

Almost 20 years ago, Brocklehurst, Andrews, Richards and Laycock published a study aimed at evaluating physiotherapy treatment. They were quite overt in underlining the deficiency of the system. This is a rephrasing of their abstract: '135 patients with stroke received physiotherapy, and although almost no recovery occurred after six months, 30 patients continued with treatment beyond this time. The objectives of physiotherapy for patients with stroke need careful definition. Alternative treatments, possibly carried out by volunteers or more simply trained personnel, merit further consideration'. Not much progress has been made since: very similar conclusions were drawn by recent investigations, discussions and meta-analyses (e.g. de Pedro-Cuesta, Widén-Holmqvist and Bach-y-Rita, 1992; Dombrov, Sandok and Basford, 1986; MacWalter, 1993; Ottenbacher and Jannell, 1993; Tyson, 1995). More critical thought is needed to drag the discipline of rehabilitation up and out of the quagmire of therapeutic blunders. Questions such as 'what kind of therapy', 'how much therapy' and 'when should it start' still beg an answer. These answers can only come from proper *ad hoc* research projects, as Patrick Salter underlined in his recent lecture at the Queen Margaret College, Edinburgh (Anon, 1996). A sound, fresh scientific approach is what is needed to overcome the pachydermic attitude of the discipline. Physiotherapists should welcome a more scientific approach, although, for reasons that are hard to fathom, this is far from being the rule. A conservative and rather dogmatic attitude dominates the field.

Investigations in physiotherapy are really imperative and should be encouraged as much as possible, both for their potential benefits in developing sound treatments and for the economic implications of the results of such research. However, instead of facilitating the integration between scientists and clinicians, what is typically done is to pretend that everybody working in a rehab setting, even with no specific scientific background, out of the blue becomes a researcher. The consequence of this short-sighted policy is that, in their research projects, physiotherapists often ask themselves rather grandiose questions, which are difficult to answer. On

the contrary, rigorous experimental paradigms aimed at identifying and developing measurable variables suitable for scientific inquiry, which might be borrowed from other disciplines, are rather unpopular. A recent survey of all papers published in 40 core rehabilitation journals revealed that only 2.3% of them were concerned with evaluation of treatments and authored by physiotherapists (Riddoch and Lennon, 1991). Unfortunately, it also turned out that most of them were far from watertight and scattered with experimental pitfalls (MacWalter, 1993; Riddoch and Lennon, 1991). The achievements, either cultural or applied, are proportionate to the resources (economic and intellectual) devoted to the enterprise: in the case of rehabilitation, there is often only a lot of hand waving. So today 'physiotherapy science' is still an oxymoron.

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