

## The exodus of the non-rational from orthodox medicine

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The knowledge accumulated in the life sciences since World War II is said to exceed that acquired during the rest of mankind's history. *EXPERIENTIA* has contributed to the dissemination of these scientific treasures. In the early post-war years this journal helped to overcome the scientific isolation of continental Europe, and it has remained a valuable vehicle for publishing research, especially because of its interdisciplinary character. Therefore, *EXPERIENTIA* can be sincerely congratulated by the scientific community on its fiftieth volume.

The spectacular advances in the life-sciences and related fields have had a tremendous impact on the development of medicine. In fact, since the pre-war years the transformation of medicine from an art and religion into a science has received a new impetus. Due to the contributions of the biological and other natural sciences, diseases which formerly had a high mortality rate, e.g. pneumonia, tuberculosis and meningitis, have lost much of their terror. Furthermore, the quality of life has improved for many patients due to the new possibilities (vaccination, medicine, surgery etc.) for controlling incapacitating disorders such as poliomyelitis, cardiovascular, endocrine and degenerative conditions. New treatments have also enabled social reintegration of many chronically ill patients, such as those suffering from mental disorders who were previously shunned by society and kept in isolation. Although this progress also has problematic facets, not to be dealt with here, nobody can deny that the strengthening of the scientific pillar of medicine has contributed greatly to the well-being of society.

Despite these successes there has been an increasing tendency in modern society to move away from 'orthodox' medicine, i.e. the medicine supported by that strong scientific pillar, which is taught in universities and medical schools. A manifestation of this phenomenon is the popularity of alternative medicine. A report of the British Medical Association enumerates more than 100 specialities of alternative medicine, including homeopathy, acupuncture, neural therapy and radiesthesia<sup>1</sup>. According to a review in the British Medical Journal covering several European countries<sup>2</sup>, up to 30 percent of the population use some form of

alternative medicine, and there seems to be a similar situation in the USA<sup>3</sup>. The proportion of alternative practitioners to family doctors may be quite high, e.g. 1:1.6 in Denmark<sup>2</sup>. Even disciples of orthodox medicine (in Switzerland up to 12%, ref. 4) also carry out some form of alternative practice.

Is the popularity of alternative medicine based on its scientific principles, which are not recognised by or are still unknown to orthodox medicine, or is it rather due to other factors such as placebo effects (see below) or coincidence with natural recovery? Investigational procedures (e.g. controlled clinical trials comparing groups of individuals) used in orthodox medicine to exclude such factors are probably not suitable for alternative therapies, where treatment should allegedly be different for each patient: in this case better methods do not seem to exist. However, there are two alternative therapies, homeopathy and acupuncture, which have often been submitted to controlled trials. The results which have been published in peer-reviewed scientific journals were either negative or inconclusive, owing to methodological deficiencies or lack of confirmatory evidence. This is especially the case for homeopathy<sup>1,5,6</sup>. Acupuncture does seem to exert non-placebo-induced analgesic actions in a limited proportion of patients<sup>1,7-9</sup>. It is, however, doubtful whether these effects are based on neurophysiological principles (e.g. gating mechanisms, release of endorphins) specific for acupuncture and unknown to orthodox medicine. Proposals for new and revolutionary theories about possible mechanisms of action of alternative procedures, and the effectiveness of remedies like the ultra-dilute homeopathic solutions, remain to be proven.

Thus, to date, there is no solid evidence which unequivocally proves alternative forms of medicine to be based on scientific principles, e.g. physical laws, which remain unknown to orthodox medicine. Therefore, according to our present knowledge, non-science-based factors seem to be the main reason for the success of alternative medicine. It is well known, also in orthodox medicine, that the faith and hope of both patients and doctors regarding treatment, the sympathy and charismatic influences of the healer, and the understanding and tolerance of the environment, are important factors

influencing the therapeutic outcome. This has been demonstrated in controlled clinical studies even for serious health conditions. For instance, in women with metastatic breast cancer the survival of those receiving group therapy in addition to standard treatment was significantly longer than that of a comparable group without this additional treatment<sup>10</sup>. Likewise in patients after cardiac infarction, emotional support decreased the mortality rate<sup>11</sup>. Psychological and emotional factors can also be responsible for endocrinological changes<sup>12</sup>. Furthermore, it is well known that during drug trials placebo effects (i.e. effects of preparations without pharmacologically active ingredients, containing only inert substances like water, sugar and starch) may be responsible for therapeutic success. Non-rational therapeutic influences are especially important in disorders with psychological and psychosomatic components, which are encountered quite frequently in general practice<sup>13,14</sup> and are probably one of the main targets for alternative medicine.

Why, then, is alternative medicine so popular for its non-rational influences, although these also play a distinct role in orthodox medicine? On the one hand, the attitude of modern society towards orthodox medicine has changed. The doctor's authority is being partly replaced by self-determination of the patient. This opens the door for 'attractive' alternative practices. Also, there is a trend towards holistic medicine, claimed to be a prominent feature of alternative medicine, although good practitioners of orthodox medicine have always followed this approach. Furthermore, many persons have a strong belief in 'nature' and an emotional aversion to chemistry (e.g. to the synthetic drugs used in orthodox medicine). They are of the (erroneous) opinion that alternative medicine is devoid of unpleasant side effects and other adverse consequences. On the other hand, it must be admitted that modern orthodox medicine does have some deficiencies. This is partly due to its specialisation and the domination of the technical aspects of diagnosis and therapy. The development of new, powerful techniques has been and still is necessary for the progress of medicine. However, it leads to uneasiness and frustration in patients when, due to the preponderance of the 'repair-aspects' of the treatment, the psycho-emotional and psycho-social components are not adequately dealt with by doctors. Also, despite the spectacular progress of medicine, there is still no effective treatment for life-threatening and disabling diseases like some forms of cancer, AIDS, Alzheimer's disease, and other neurological and degenerative disorders. In addition, as mentioned above, we are faced with the problem of the psychosomatic disturbances for which orthodox medicine sometimes has no effective cure and/or only little interest. The feeling of helplessness regarding such conditions often results in a regression of patients and doctors to magical thinking<sup>15</sup>,

leading to practices which sit precariously in the school of orthodox medicine.

The lacunas in orthodox medicine are often successfully filled by alternative medicine. It can be assumed that alternative practitioners generally spend more time than many busy orthodox specialists listening and talking to the patients and discussing the emotional problems underlying their disturbances. Also, representatives of alternative medicine often present attractive explanations, theories and dogmas (generally not based on scientific evidence) regarding their therapies, which are understandable and attractive for the patients. In other cases alternative medicine has a religious or philosophical background. All this may strengthen the faith of the patients in the treatment and exert a positive influence on the recovery process. In addition, some practices of alternative medicine have a particular appeal for the mystical, magical and religious sides of their patients. They probably reinforce the psycho-emotional influence of the healer in the same way that the sound of the organ in church sensitizes the faithful to the sermon of the priest.

What is the place of alternative medicine in our 'enlightened' century? Certainly, the popularity of alternative medicine should not lead to a weakening of the scientific pillar of orthodox medicine. On the contrary, research to strengthen this pillar needs continuous, engaged support. Scientific medicine has been responsible for impressive victories against lethal and disabling diseases in the past, so it is our greatest hope for solving the many remaining major health problems in the future. In addition, it should be recognised that diagnosis and treatment of life-threatening diseases may be obscured and retarded by alternative practices, if these are not performed within responsible limits. This can lead to serious consequences for the patient and society. On the other hand, the success of alternative medicine could be a stimulus for teachers and practitioners of orthodox medicine to pay more attention to the non-rational component of medicine, which they may have neglected. It must be left finally to the judgement of the individual doctor whether or not he needs the support of alternative practices for strengthening the non-rational vein of this treatment. A sober and critical attitude regarding the possible merits and limitations of such practices will help in avoiding charlatanism. With all this in mind, it cannot be excluded that, one day, research may provide solid evidence for some as yet unrecognised new principle in alternative medicine. In this context a passage of Shakespeare's *Hamlet* comes to mind: 'There are more things in heaven and earth, Horatio, than can be dreamt of in your philosophy', put into modern terms by a graffiti sprayer as follows: 'The computer knows everything, but nothing else'.

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