

## Where am I?

### Music therapy applied to coma patients

Intensive care treatment is a highly technological branch of medicine. Even in what may appear to be hopeless cases, it can save lives<sup>1</sup> through the application of this modern technology. However, albeit in the context of undoubted success, intensive care treatment has fallen into disrepute. Patients are seen to suffer from a wide range of problems resulting from insufficient communication, sleep and sensory deprivation<sup>2,3</sup> and lack of empathy between patient and medical staff. Many activities in an intensive care situation appear to be between the unit staff and the essential machines, ie subjects and objects. To a certain extent patients become a part of this object world. We propose that improvised music therapy can be a useful adjunctive therapy in such situations both for the patient and the staff.

In these situations of intensive monitoring and machine support, particularly in the case of comatose patients, we may ask of ourselves 'Where is the self of the patient?'. Needleman<sup>4</sup> reminds us that the power of scientific thought has been to organize our perceptions in such a manner that we can survive in the world. Hence the value of scientific medicine and instrumentation. However, he goes on to say that science has also neglected the human body as an instrument of knowledge and as a vehicle for sensations as direct as ordinary sensory experience, but as subtle as consciousness.

At the suggestion of a hospital neurologist a music therapist began working with coma patients. To investigate this approach further the work was monitored in an intensive treatment unit. Five patients, between the ages of 15 and 40 years, and with severe coma (a Glasgow Coma Scale score between 4 and 7) were treated. All the patients had been involved in some sort of accident, had sustained brain damage and most had undergone neurosurgery.

The form of music therapy used here is based on the principle that we are organized as human beings not in a mechanical way but in a musical form; ie a harmonic complex of interacting rhythms and melodic contours<sup>5-7</sup>. To maintain our coherence as beings in the world then we must creatively improvise our identity. Rather than search for a master clock which coordinates us chronobiologically, we argue that we are better served by the non-mechanistic concept of musical organization. Music therapy is the medium by which a coherent organization is regained, ie linking brain, body and mind. In this perspective the self is more than a corporeal being.

Each music therapy contact lasted between 8 and 12 min. The therapist *improvised her wordless singing* based upon the tempo of the patient's pulse, and more importantly, the patient's breathing pattern. She pitched her singing to a tuning fork. The character of the patient's breathing determined the nature of the singing. The singing was clearly phrased so that when any reaction was seen then the phrase could be repeated.

Before the first session the music therapist had met the family to gain some idea of what the patient was like as a person. On contacting the comatose patient she would say who she was, that she would sing for the patient in the tempo of his or her pulse and the

rhythm of breathing. The unit staff were asked to be quiet during this period and not to carry out any invasive procedures for 10 min after the contact.

There were a range of reactions from a change in breathing (it became slower and deeper), fine motor movements, grabbing movements of the hand and turning of the head, eyes opening to the regaining of consciousness. When the therapist first began to sing there was a slowing down of the heart rate. Then the heart rate rose rapidly and sustained an elevated level until the end of the contact. This may indicate an attempt at orientation and cognitive processing within the communicational context<sup>8,9</sup>. EEG measurement showed a desynchronization from theta rhythm, to alpha rhythm or beta rhythm in former synchronized areas. This effect, indicating arousal and perceptual activity, faded out after the music therapy stopped.

Some of the ward staff were astonished that a patient could respond to such quiet singing. This highlights a difficulty of noisy units such as these. All communication is made above a high level of machine noise. Furthermore commands to an 'unconscious' patient are made by shouting formal injunctions, ie 'Show me your tongue', 'Tell me your name', 'Open your eyes'. Few attempts are made at normal human communication with a patient who cannot speak or with whom staff can have any psychological contact. It is as if these patients were isolated in a landscape of noise, and deprived of human contact.

A benefit of the music therapy was that the staff were made aware of the quality and intensity of the human contact. In the intensive care unit environment of seemingly non-responding patients, dependent upon machines to maintain vital functions and anxiety provoking in terms of possible patient death, then it is a human reaction to withdraw personal contact and interact with the machines. This is further exacerbated by a scientific epistemology which emphasizes the person only as a material being and which equates mind with brain.

A period of calm was also recognized as having potential benefit for the patient. What some staff fail to realize is that communication is dependent upon rhythm, not upon volume. We might argue that such unconscious patients, struggling to orient themselves in time and space, are further confused by an atmosphere of continuing loud and disorienting random noise. For patients seeking to orient themselves then the basic rhythmic context of their own breathing may provide the focus for that orientation. This raises the problem of intentionality in human behaviour, even when consciousness appears to be absent. It is also vital that staff in such situations do not confuse 'not acting' with 'not perceiving'.

We can speculate that the various body rhythms have become disassociated in such comatose states. The question remains then of how those behaviours can be integrated and where is the seat of such integration.

Improvised singing appears to offer a number of possible benefits for working with coma patients in terms of human contact and promoting perceptual responses. Human contact through singing, rather than speaking, also suggests that the fundamentals of human communication are musical in form. In this way we have the art of medicine within the science of medicine. Perhaps the skills of human communication may become part of medical and nursing education<sup>5</sup>, particularly in the context of intensive

care. Although what we know from machines is valuable, there are other important subtle forms of knowledge that are best gleaned through personal contact with the patient.

The question still remains for us as clinicians and scientists when faced with a patient in coma, or a persistent vegetative state, 'Where is the person and how can I reach her?', and then for ourselves as fellow human beings, 'Where am I?' This raises further the ethical issues of decisions about terminating life support when the brain and the person are no longer seen as one and the same entity<sup>10</sup>.

**D Aldridge**

Medical Faculty,  
Universität Witten Herdecke  
Beckwig 4, D5804 Herdecke, FRG

**D Gustorff**

Institut für Musiktherapie, Medical Faculty,  
Universität Witten Herdecke

**H-J Hannich**

Wilhelms-Universität Klinik für Anästhesiologie  
und operativ Intensivmedizin  
Albert-Schweitzer-Strasse 33, D4400 Münster, FRG

**References**

- 1 Hannich H. Überlegen zum Handlungsprimat in der Intensivmedizin. *Medizin Mensch Gesellschaft* 1988;13:238-44
- 2 Wilson L. Intensive care delirium. *Arch Intern Med* 1972;130:225-6
- 3 Ulrich R. View through a window may influence recovery from surgery. *Science* 1984;224:420-1
- 4 Needleman J. *A sense of the cosmos*. New York: Arkana, 1988
- 5 Aldridge D. A phenomenological comparison of the organization of music and the self. *Arts in Psychotherapy* 1989;16:91-7
- 6 Aldridge D. Music, communication and medicine. *J R Soc Med* 1989;82:743-6
- 7 Nordoff P, Robbins C. *Creative music therapy*. New York, John Day, 1977
- 8 Sandman C. Afferent influences on the cortical evoked response. In: Coles M, Jennings JR, Stern JA eds. *Psychological perspectives* (festschrift for Beatrice and John Lacey). Stroudberg, PA: Hutchinson and Ross, 1984
- 9 Sandman C. Augmentation of the auditory event related to potentials of the brain during diastole. *Int J Physiology* 1984;2:111-19
- 10 Mindell A. *Coma: key to awakening*. Boston: Shambala, 1989

---

**AIDS afterthought**

---

Barts students are no different from most final year medics in the need to choose a destination for the elective period. This need occasionally encompasses a desire to journey to a warm and exotic part of the world yet at the same time is concerned with gaining some medical experience. It is surprisingly difficult to combine these two intentions especially since hot climates are often associated with many outdoor temptations which can divert thought away from study and learning.

My elective months were spent in Sydney, Australia, a choice governed by my previous special studies in HIV and AIDS. This interest began in 1985 when I joined St Mary's hospital for one year to study 'Infection and Immunity'. From that time, the subject of AIDS and the management of the immunocompromised patient began to appear more frequently in medical journals. The neuropsychiatric complications of HIV infection were of particular interest since they demonstrated links between the immune system, opportunistic infection and psychological symptoms in patients who practised diverse lifestyles. The extent to which the AIDS epidemic will dominate current medical practice in the UK is still unclear.

My concern was to use my particular academic knowledge to support the clinical experience obtained on elective. However, I had not had any direct personal involvement in the management of HIV infection and for that reason alone was keen to spend some time attached to a unit where there was a possibility of some teaching, not only

regarding HIV infection, but also of general medicine in preparation for Finals. Fortunately, a gynaecologist friend of my parents had trained in Sydney and introduced me to a consultant immunologist there, Professor Ronal Penny. Thus I came to spend my elective at St Vincent's Hospital, Sydney. I was extremely fortunate in being funded by the Guildchrist Foundation, the Clothworkers Trust and my Medical College, all in the City of London. It was interesting that none of the London-based AIDS organizations were able to provide any assistance despite my protocol covering the very serious negative social aspect of neuropsychiatric complications of HIV infection.

The public image of the AIDS victim has been the infected homosexual or drug addict. Sydney, with its large population of both these sources of patients, also has people from every walk of life professing beliefs and carrying out behaviour that, as in all cosmopolitan society, has no norm. AIDS is making its grim inroad, indifferent to stereotyping. During my time in Sydney, I saw many aspects of inpatient, outpatient, community and laboratory care of HIV infection. It is a sad game of numbers that the Australian population is not much more than a quarter that of the UK, but contains as many recorded cases of AIDS. The field of neuropsychiatric complications was too vast for deep investigation in the limited time of the elective period. My work covered a broad overview of the illness and gave me a deep understanding of compassion.

'AIDS patients? Did you wear a mask. I hope you wore rubber gloves!' This was the reaction of several of my fellow students on my return to London. I must say that, to an extent, these intimations of fear and caution echoed my own