New Brain Technology

There is a lot of discussion and debate going on in the halls of science at present about the pros and cons and ethics of new breakthroughs in neuroscience in particular. Up to the present the many questions neuroscientists have about how the brain communicates could only be discussed in theory. New tools are constantly being developed which may help to answer existing questions and any new questions which are likely to be raised as barriers are broken down and new frontiers opened up.

Some important discoveries relate specifically to disabled people, giving them more freedom and a better quality of life. They include brain controlled computers leading to artificial limbs and brain implants that enable a person's thoughts to operate computer programs such as email and internet as well as write with word processors that can predict which word or sentence they want to type. One quadriplegic man has been able to teach himself to play video games using his brain as a controller after having a brain implant. Already a device has been developed that enables disabled people to communicate by reading their brain waves through the skin without implants. All this is expected to be followed in the future by thought-controlled wheelchairs and artificial limbs that respond when a person imagines moving.

With the dramatic pace at which neuroscience is progressing researchers are already devising various ways of reading and understanding thought patterns. The key to brain pattern analysis at present seems to be the functional magnetic resonance imaging machine (fMRI). Already scientists can predict with near-perfect accuracy the last thing you saw just by analysing your brain activity from scans taken from this machine. It is hoped that one area of this work will help doctors understand the inner world of people with mental disorders. The fMRI can already be used to map the brain's responses to images, words and emotions and also understand pictures in the brain. This is an impressive feat but the bigger challenge is working out the actual thoughts associated with the images because thoughts, unlike pictures, are not neatly recorded at the back of the brain. Scientists believe, however, they could be decoding thoughts as well as pictures, within the decade.

There is a great deal more on the neuroscience 'drawing board' that I will not go into here. Suffice to say, enough discoveries are so close to a breakthrough with dramatic and far-reaching effects that calls for debate into the ethical issues raised by the studies are growing around the world. The ability to probe people's minds, read another's thoughts and the possibility of thought control bring to the surface controversial questions about their use or misuse in the future.

Companies are already jumping on the band-wagon, working on turning the latest discoveries into real products. Neuro devices – medical devices that compensate for damage to the brain, nerves and spinal column – are growing rapidly. The greatest growth, however, is in the area of video games. Already game controls have advanced to where we can control figures on the screen by waving our hands, dancing and pointing at

it and devices in which the user's virtual self will smile and blink when the user does will soon be available. Soon we will need only one muscle to control the action – the brain.

In Conclusion

The 1990's were declared "The Decade of the Brain" by George Bush. Perhaps we could call this decade (2010-2020), 'The Decade of the Mind' because of the huge amount of scientific interest and research being carried out on the brain, the mind and thought resulting in new, and in some ways, invasive technologies opening up the workings of the brain and the mind. It is hoped that the above information will enlighten you and form a solid basis for studies on the mind and thoughts that follow.

Remember

The brain is the physical instrument through which the mind works. It is important, therefore, that we all have some basic knowledge of the way our brain is set up and how it works in co-ordinating our metabolic life processes as well as its functions in processing information from the mind. Where once people thought very little at all about the workings of the brain, now in all parts of the world, scientists are putting great emphasis on solving the mysteries of this intricate data processing system called the brain.