BIO-FEEDBACK (cont.)

By this time some yogis and zen monks have actual- ly had the opportunity to try feedback training, and to listen to themselves as they meditate. They have tended to agree with westerners' speculations that such devices might be useful in teaching people the elementary patterns of meditation. In other words, westerners could overcome handicaps to the development of various meditative tra- ditions and busy schedules in imitating the physiological patterns of expert meditators, thereby perhaps learn- ing the basic state of mind for at least the beginning stages of meditation. Subiects can learn to control their EEG to a measurable extent after only a brief period of practice (Novlis & Kamiya, 1969; Novlis & Macdonald, 1969). EMG control, depending on the muscle used, is also not difficult to achieve. Thus a student with either a portable feedback device similar to that designed by Macdonald, or with a central training facility available, for example at his college health service, could learn to meditate in a state of mind similar to that of a monk or a yagi. Thus feedback devices and feedback training may be useful in helping people with a chance to ex- plore the internal, and in a socially constructive way. Perhaps feedback training at the hands of western education are so oriented to discrimination and control of external events, the opposite abilities, perhaps provid- ing some relief from practice of the others, are highly prized among the younger generation. Certainly feed- back training is less dangerous and more constructive than drug use, or "dropping out", alternatives which attract large numbers of bright and potentially highly valuable young members of our society (H. H. Nowlis, 1968)

Concluding Remarks

The feedback training technique lends itself easily to all applications and we are sure there are many appli- cations beyond what we have mentioned here. When inexpensive portable feedback devices are commercial- ly available, for example, we are sure there are many more creative uses. We have only mentioned our more straightforward and practical ideas. Much more speculative thinking has gone along the lines of (1) could feedback devices be developed to cue a woman as to her time of ovulation, (2) could feedback devices be used to get two or more people into very similar states, thus allowing demonstration of mental telep- athy and other phenomena of parapsychology, (3) could feedback devices be helpful in the training of creative artists, training the artists to bring out internal states appropriate to various types of aesthetic pro- ductions, (4) could such devices be used in controlling artificial limbs, so that voluntary physiological changes would change the position of the limb, (5) could awareness of various muscle activities through EMG feedback be useful to athletes, etc. It is hard to stop thinking of uses once you begin trying it.

ACID PROGRAMMING

John Lilly charts a self-exploration with a mixture of acid and sensory deprivation, in the language of a model of the human brain as a gigantic biocomputer, thousands of times larger than today's machines, with unknown boundaries in the body. The software of the human computer, all the programs and metapro- grams, is the mind. Consciousness is itself a particular program. Self-programming can be achieved through the metaprogramming of the higher level systems of the brain and self-metaprogramming is done conscious- ly in metacommand language, with the resulting pro- gramming continuing below the threshold of aware- ness. The levels expressed in metacommand language cover large segments of the computer's operation, rather than local detail.

LSD is a reprogramming substance which introduces white noise (randomly varying energy) into the computer's system. The noise adds enough uncer- tainty to the meanings of the usual signals in the cir- cuits to make new interpretations easy. "In such noise one can project almost anything at almost any cognitive level in almost any allowable mode." For example, hallucinations is simply a visual display pro- jected onto white noise. LSD grants the powers of display of data patterns, programs, or storage contents, replay of past experiences, and variation of the motivational charge attached to stored material.

Attention of external stimulation frees circuitry for inner cognition, "In the maximally extended environment [92 to 95 degrees F. isothermal skin, saltwater suspension, zero light levels, near-zero sound levels, without clothes, without wall or floor contacts, in solitude, in remote isolation, for several hours], the addition of LSD-25 allows one to see that all the pre- vious experiences with 'outside screens' [for projec- tions] are evasions of deeper penetration of self." Once various anxieties and fears have been overcome, thought and feeling expands into the circuitry usually preserved with that of the self. "The self is still centered at one place but its boundaries have disap- peared and it moves out in all directions and extends to fill the limits of the universe as far as one knows them."

Lilly is interested in using these powers for self- analysis with the goal... "make the computer general purpose." That means "there can be no display, no

It was brain damage that we had in mind all along, the chromosome damage was just gravy. -SB

John C. Lilly, M.D.

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