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It is proposed that expression of neural plasticity is a form of adaptation based on natural selection, where cells or cell groups deprived of sensory input actively go and look for information in order to survive by means of dendritic sprouting. The Darwinian model of brain plasticity can explain some aspects of phantom percepts induced by deprivation of input which was not well explained by classical plasticity without contradicting pertinent data from the neurophysiological, neuroanatomical, functional neuroimaging, and clinical literature. Applying the concept of Darwinian plasticity to phantom pain and phantom sound (tinnitus) permits the development of new treatments for these symptoms. This can be achieved by supplying the missing information via electrical and magnetic stimulation of the auditory and the somatosensory cortices.

The clinical results as well as recent basic neuroscience data suggest that Darwinian and classical plasticity might co-exist and interact in the development of phantom percepts.

Oct. 16 (Fri.) 10:40-11:00

### **Measurement of Individuality in the Thinking Patterns**

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What are the similarities and differences in ways of thought and perceptions between individuals? In this light we classified them into several main groups, such as “image-thinking type” and “verbal-thinking type,” according to their answers to a questionnaire designed to identify patterns of thinking. Each group was provided with the same thinking tasks, while their brain activities were monitored with the SQUID. We deduced from our findings certain patterns, traits and tendencies, as well as individual characteristics.