

37. This simple concept that disease leads to regression of spine synapses is extremely important because ...

John C.

L12

John C. Eccles, Facing Reality.

Springer-Verlag, NY, Heidelberg, Berlin, 1970

Ch. III. Synaptic Mechanisms Possibly

Concerned in Learning - Memory.

1959, 1960, 1965, 1967.

26. Argument against Heide's theory of Molecular Memory.

33. "There are now beautiful pictures of spine synapses occurring under experimentally imposed conditions of disease.

" ... at least in the early periods of life, a closed stimulation is of the greatest importance for maintaining & developing the distinctive spines ... supports hypothesis that learning is due to usage because it demonstrates the regression

that results from disease.

34. Experiments of Valverde ⁽¹⁹⁶¹⁾ & Pung-Stancu & Valverde (1968)

(1963, a, b.) by which there were histological & physiological investigations of nerve cells in the visual pathway of kittens, with one eye deprived of normal vision from birth.

He found that his deprivation led to unresponsiveness of cells in the visual cortex to stimulation of the deprived eye.

It appears that the connections already found to be established at birth had regressed. When the normal deprivation was applied later in life in visually experienced kittens, little if any physiological abnormality was induced.



Eccles

39. A signal for learning is merely the microgrowth of synaptic connections already in existence... The flow of specific information by receptor organs into the nervous system will result in the activation of specific spatio-temporal patterns of impulse discharges. Receptors so activated will grow in an increased effectiveness; hence, the more a particular spatio-temporal pattern of impulses is replayed in the cortex, the more effective become its synapses relative to others. As a result of this synaptic efficacy, later similar sensory inputs will tend to traverse the same neuronal pathways as to evoke the same responses, both overt & covert, as the original input.

42/3 Summary.

Propriety of the Erich Fromm Document Center. For personal use only. Citation or publication of material prohibited without express written permission of the copyright holder.
 Eigentum des Erich Fromm Dokumentationszentrums. Nutzung nur für persönliche Zwecke. Veröffentlichungen - auch von Teilen - bedürfen der schriftlichen Erlaubnis des Rechteinhabers.

