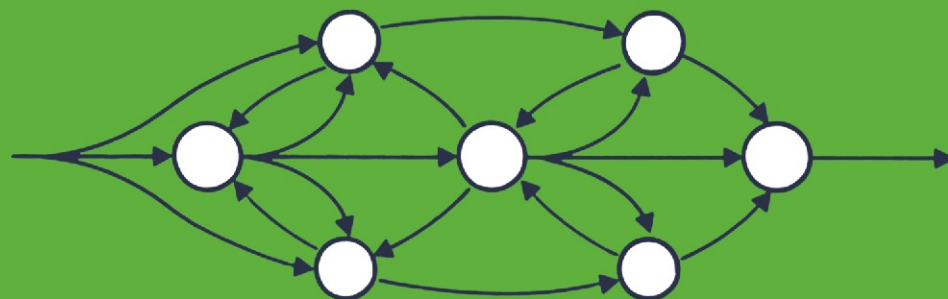
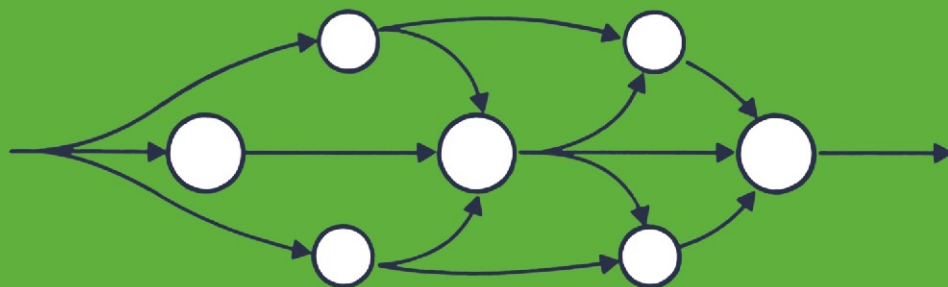


Brain Theory

Edited by
Günther Palm and Ad Aertsen





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Proceedings of the First Trieste Meeting
on Brain Theory, October 1–4, 1984

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Reactive and creative system differing in absence or presence of closed loops. From P. Johannesma, this Volume, page 34, Figure 6.

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Introduction

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The working of the brain certainly presents one of the most challenging problems in natural science. There is an overwhelming amount of experimental data on the brains of various animals. However, there is no unified brain theory yet. Up to now there exist a number of different theoretical approaches to the understanding of the brain, which originate from different experimental or experiential backgrounds. In some of them this background is quite explicit e.g., in the scope of the theory; others have arrived at more general theories in which the original background remains implicit. This situation is not hopeless, though, since there is at least a common language in which the relevant questions can be discussed, namely that of mathematical formalism.

In a sense, different theories of the brain can be compared to different spectacles through which the brain is observed. A meeting of brain theorists then has the objective of comparing these spectacles. Therefore the participants of such a meeting have to be able and willing to understand the working of each other's spectacles and even to put them on to have a look through them. The presentation of experimental data in such a meeting primarily serves the purpose of illustrating the working of the spectacles by showing a view through them. Usually the emphasis in interpretation of data in neuroscience is on the view, the spectacles through which the view was obtained remain implicit.

The present Proceedings of the First Trieste Meeting on Brain Theory can be regarded as a collection of all those spectacles that were presented and probed during the meeting. This collection contains old spectacles, the reviews of influential theoretical papers (pp. 229–259), and new spectacles, the contributions of the participants (pp. 1–228), many of them improvements and modifications of older ones.

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