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4. SIMULATION RESULTS

Figure 2 demonstrates the recall in a system with already aquired knowledge about input segments. The aspect of the input with the highest complexity gets the lead in organizing the search for inputs fitting to it and starts the process of sequential recall (activity pattern a) b)). The channel-specific mechanism for inhibition after stabilizing a decision takes this decision for a certain time out of discussion (c). In a time sharing manner other CS decisions can evolve (d-f), thus creating a reverberating sequence of limited numbers of such decisions. Hence, the sequence is ranked according to the complexity (dimension of active channels) of selected input segments. Pattern (g) is an unknown remaining part of the input which cannot be segmented any deeper. Therefore it will be learned at CS as a new category.

A rapid synchronization back to a completely parallel representaion is only possible, if the completely complex input is already learned at CS as a parallel representation. In case of not yet having this knowledge, this stable reverberating sequence represents the state of knowledge of the system on this scene.

5. CONCLUSIONS

The model described is a minimum configuration for enabling a processing-state dependent attentional control which is a flexible self-regulating scheme with the potential ability to start-up, direct and sharpen the associative search in the distributed memory. The next step in application of our parallel-sequential recognition module GNOM will be the implementation of a large-scale multi-modular system for selective visual attention, whereby effects of intermodular communication between many Category Subsystems and of fast dynamical synaptic modulation for temporal synchronization of local decisions [10] will be objects of research.

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