

From integration to remapping

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Multisensory integration has recently been studied quite extensively. A statistical optimal model based on Maximum Likelihood Estimation has been proposed and it was shown experimentally that humans integrate multisensory information under many circumstances in such an optimal way.

However, it has also been realized that this model needs to be extended in several ways in order to explain, for example, the breakdown of integration with larger discrepancies between the sources of sensory information. One way of incorporating the influence of intersensory correspondence in a statistical way is to describe this correspondence using a Bayesian Prior. Integration is the immediate reaction to intersensory discrepancy. When the system is exposed to an intersensory conflict for an extended time period it causes the system to recalibrate the intersensory mapping. We have recently shown that the same statistical factors that are involved in multisensory integration also play a role for the remapping process. The goal is to come up with a unified statistical model that can account for the processes involved in integration and remapping.