Record Nr. UNINA9910820854103321

Autore Fademrecht Laura

Titolo Action recognition in the visual periphery / / vorgelegt von Laura

Fademrecht

Pubbl/distr/stampa Berlin:,:Logos Verlag,, [2017]

©2017

ISBN 3-8325-9202-4

Descrizione fisica 1 online resource (143 pages)

Collana MPI Series in Biological Cybernetics

Disciplina 612.8

Soggetti Neurosciences

Visual pathways

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Note generali PublicationDate: 20170331

Sommario/riassunto

Long description: Humans are social beings that interact with others in their surroundings. In a public space, for example on a train platform, one can observe the wide array of social actions humans express in their daily lives. There are for instance people hugging each other, waving to one another or shaking hands. A large part of our social behavior consists of carrying out such social actions and the recognition of those actions facilitates our interactions with other people. Therefore, action recognition has become more and more popular as a research topic over the years. Actions do not only appear at our point of fixation but also in the peripheral visual field. The current Ph.D. thesis aims at understanding action recognition in the human central and peripheral vision. To this end, action recognition processes have been investigated under more naturalistic conditions than has been done so far. This thesis extends the knowledge about action recognition processes into more realistic scenarios and the far visual periphery. In four studies, life size action stimuli were used (I) to examine the action categorization abilities of central and peripheral vision, (II) to investigate the viewpoint-dependency of peripheral action representations, (III) to behaviorally measure the perceptive field sizes of action sensitive channels and (IV) to investigate the influence of

additional actors in the visual scene on action recognition processes. The main results of the different studies can be summarized as follows. In Study I a high categorization performance for social actions throughout the visual field with a nonlinear performance decline towards the visual periphery was shown. Study II revealed a viewpoint-dependence of action recognition only in far visual periphery. In Study III large perceptive fields for action recognition were measured that decrease in size towards the periphery. And in Study IV no influence of a surrounding crowd of people on the recognition of actions in central vision and the visual periphery was shown. In sum, this thesis provides evidence that the abilities of peripheral vision have been underestimated and that peripheral vision might play a more important role in daily life than merely triggering gaze saccades to events in our environment.