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Definition: Optic ataxia

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Optic ataxia is an impairment of visually guided reaching that is attributable neither to primary visual, primary proprioceptive or motor deficits, nor to cerebellar or cognitive impairments. It is one of the triad of symptoms that make up Bálint's syndrome, though it can be observed without the full syndrome following either bilateral or unilateral stroke, progressive degeneration or seizure, usually involving the posterior parietal cortex. Optic ataxia was named because the reaching problem was considered to be a disorder of aiming movements (ataxia) specific to visual targets (optic).

Patients with optic ataxia can usually reach and grasp accurately to targets that they fixate directly, although the ability to make fast trajectory corrections is severely deteriorated. This impairment slows them down but does not prevent them to interact with their environment. Visual eccentricity is a crucial determinant of the impairment, with larger errors for more eccentric targets and for goal-directed actions of the limbs monitored in peripheral vision such as when shaking hands or approaching a staircase, although this does not give rise to spontaneous complaints.

In unilateral cases, misreaching can be restricted to the contralesional visual field (field effect) or hand (hand effect). Errors associated with the field effect typically show a bias toward the point of fixation. Errors associated with the hand effect are most readily observed if visual feedback from the hand is unavailable during the reach. Reaching with the contralesional hand may then be inaccurate even for fixated targets.

In bilateral cases, misreaching may occur with either hand, and for targets throughout the visual field. In extreme cases, 'magnetic misreaching' can occur, such that the person reaches toward the point of gaze, rather than to the object presented in peripheral vision.