

**TITOLO:** Perceptual Awareness in the Reorganizing Brain (ERC-2013-ADG)

**DATA DI INIZIO:** 12 settembre 2013

**DURATA:** 5 anni

**DIPARTIMENTI CHE PARTECIPANO:** Dipartimento di Scienze Neurologiche e del Movimento - Università di Verona, Università di Trento.

**RESPONSABILE SCIENTIFICO DEL PROGETTO (UNIVR):** Prof. Carlo Alberto Marzi

**NOME dell'Ente/Società finanziatore:** Commissione Europea – ERCEA (European Research Council)

**IMPORTO TOTALE:** Euro 2.139.556

**OBIETTIVI:**

The present project aims at casting light on the neural and cognitive reorganization of visual function following unilateral lesion at various levels of the central visual system such as optic tract, optic radiation, primary visual cortex, extrastriate visual areas. In the first part of the project we will employ behavioural as well as brain imaging methods to study the basic neural mechanisms of blindsight, that is, above chance visually guided behaviour in hemianopic patients in the absence of visual awareness. The neural and cognitive substrate of this condition will be compared with that of conscious vision in order to tease apart the neural and cognitive mechanisms responsible of the shift from unconscious to conscious vision. In addition to purely behavioural experiments all patients will be tested while recording, in planned sequential experiments, ERP, MEG and fMRI to assess the processing stage and the brain areas subserving unconscious and conscious vision, respectively. This procedure will enable us to correlate the level of perceptual awareness retained or acquired and the lesion site. In the second part of the project we will use visual imagery to “access” the deafferented or lesioned visual cortex. By means of MRI and MEG recording we will assess the effect on specific cortical areas of focusing a mental visual image on given portions of either the intact or the hemianopic field. The result of this procedure will constrain the development of novel imagery-based visual rehabilitation protocols tailored individually on the basis of the lesion profile of the patients and on the presence of concurrent brain imaging feedback on the plastic cortical changes occurred as a result of specific training.

**AREE DI RICERCA DEL PROGETTO:**

Neuroscienze-Anatomia