Standing Committee for the Humanities

OMLL: The Origin of Man, Language and Languages

A EUROCORES (European Science Foundation Collaborative Research) programme

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Action, gesture and words in a developmental and evolutionary perspective (CRP 01- JA05)

- Eva Berglund, The Research Group for Language and Psychology, Uppsala University, Sweden

Cross-cultural, cross-linguistic and atypical aspects on words, gestures and signs in the acquisition and development of language

- Domenico Parisi, Institute of Cognitive Sciences and Technologies, CNR, Rome, Italy

Artificial life models of the evolution of language

- Giacomo Rizzolatti, Department of Neuroscience, Università degli Studi di Parma, Italy

Mirror neurons and communication

- Virginia Volterra, Institute of Cognitive Sciences and Technologies, CNR, Rome, Italy

Words, gestures, and signs in the acquisition and development of language

Abstract:

Main goal:

Integrating research on language acquisition in children, sign language, neural representation of language, and computational models of the evolution of language, in order to explore:

- the relationships between vocal and manual linguistic signals in the evolution of human language
- the role of 'mirror neurons' in the evolutionary emergence of human communication

An important feature of the joint program is its international and interdisciplinary emphasis

Words, gestures, and signs in the acquisition and development of language
Principal Investigator: Virginia Volterra

Cross-cultural, cross-linguistic and atypical aspects on words, gestures and signs in the acquisition and development of language
Principal Investigator: Eva Berglund

These two first projects aim to better understand the developmental processes at work during early stages of language acquisition and development, integrating different perspectives and

methodologies (parental questionnaires and naturalistic observations). Cross-sectional and longitudinal data on early gestures and words used by Italian and Swedish children between 9 and 24 months are analysed and compared. The main hypotheses are that there is a continuity between an earlier 'preverbal' and a later functionally 'equivalent' linguistic form, and that the use of gesture is a robust developmental phenomenon, exhibiting similar features across different children and cultures.

Mirror neurons and communication
Principal Investigator: Giacomo Rizzolatti

This project explores, by using single cell recordings in monkeys, the existence of acoustic mirror neurons that parallel visuo-motor mirror neurons already well described in the literature. The existence of acoustic mirror neurons can be an important step toward the establishment of vocal communication in humans.

Artificial life models of the evolution of language
Principal Investigator: Domenico Parisi

This project uses computer simulations in order to explore the evolutionary emergence of linguistic signals in organisms whose behavior is controlled by a neural network.