

The Core of Learning – The Mirror Neuron System

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MC / EHF

Mirror Neurons

LEARNING

Conditioning

Cognitive Learning

I M I T A T I O N

Direct Matching

Cognition based imitation

Classical Operant

Learning by Problem Solving

Observation Activity

„Behaviour“

„Action“

Mirror Neurons

- The origin: W. B. Carpenter
- The application: Bandura
- The sensation: G. Rizzolatti / V. Gallese

Mirror Neurons

- Next step: M. Umiltà
- Extending the concept: Asterix and Obelix
- The breakthrough: Rizzolatti/Gallese/Iacoboni

Mirror Neurons

- Additional Findings: Keysers and Fogassi
- Importance of Motor Vocabulary and
- Language Competence
- Demonstration vs. Verbal Description

Mirror Neurons

- Cognition vs. Direct Matching
 - pros and cons

Level of Coaches and the Team

Level of Teachers Education and the Practical Work

Education of Referees and Delegates

Mirror Neurons

- Learning from a model
- Limbic System Controlling Function
 - Hippocampus vs. Amygdala
 - Motivation Fear
 - Credibility „Pseudo-Reflexes“
 - Neuromodulators
 - Noradrenalin, ACTH
 - Dopamin, Serotonin