

Download: € 5,00 incl. 10% VAT

Print: € 6,00 incl. 10% VAT

Bestellung / Download [xlsx](#) Order
Meldung / Rechnung [xls](#) Invoice

Volkmar Ellmauthaler, Dr. ph., Mag.

MIRROR NEURONS (2003)

organic traces of emotional mimicry and intrinsic
representation of the opposite individual,
a neurological substrate of “emotional conformity” with the current vis-à-vis:

The inborn “Location of Performed Empathy”

Key-words:

basic functions of the Mother-Infant-Dyade (Mother-Father-Infant-Triade)

mimics, gestures – non-verbal messages

Diagnostics

language of gestures, curative training of motoneuron skills

normal and curative (e.g. post-apoplectic) functional trainings,

training of an “intentional emotional conformity”

with respect of interpersonal relationships and/or

problematic negotiational situations.

the working-off of abilities concerning emotional perception on the ground of
early traumatic experiences

examples for practical application.

Abstract:

A new field within the scientific research on the human brain has lately been concentrating on the analysis of the (organic) representations of communication within the brain. Most promising therein appears the disclosure of the so-called “**Mirror Neurons**” (Gallese/Rizzolatti 1998).

Mirror Neurons appear to be cellular clusters, localized in different cortical areas, which are creating networks with a special focus on internalizing the opponent’s mimic and actions within the observer: Every action that can be detected on a real or even virtual “vis-à-vis” (e.g. on TV) does evoke exactly corresponding representational patterns within the observing individual’s brain – in a mutual way by the chance of an eye-contact.

It appears reasonable to postulate a functional-anatomic representation of these – already well-known – abilities in the mentioned area: abilities to “emotionally read” in other individuals. The neuronal localization suggests a vital function, we may take it as a **congenital feature**, pre-built in the basic structure.

From that, we may derive a pre-natal preformation of these abilities, which will be trained and optimized in the post-natal bonding processes between mother and infant (or mother, father and infant).

Being capable of “emotionally reading” another individual’s mood, one will, reciprocally, present the own emotional reactions to the opposite individual. In any situation of risk, this ability of emotionally reading the other will grant the own survival. The opposite partner, however, may take tactical advantage of this empathic and “open” reaction. We understand, therefore, that early situations of violence may cause a tendency within the victim, to “work off” these abilities, in order to find any better chances to survive.

This again may be the reason for pseudomorph-autistic features within a molested individual. The ability to secede oneself from the mirror-neuronal functions may, then, cause particular abilities to ignore other persons’ emotional inputs, or, even more so, respond in a paradoxical way. Apart from a possible pathological reaction, such an “unwavering friendliness” may even lead to a special popularity. Such an individual may – in form of a secondary disease-profit – move others to become enthusiastic successors of a “leader”, by taking advantage of an irrational, merely unjustifiable, “attraction” and “allegiance” within others.

Apart from aspects of human science, the mirror-phenomena need to be considered under sociological and political aspects: Individuals whose personalities were impaired by early childhood injuries and deficiencies, may act confidently, even in situations of distress, by suppressing the formation of adequate response and cause feelings of fascination within others. Leadership as an individual skill makes the person appear apt and equipped with an outstanding authority.

Initial references to the possible existence of such cellular clusters in the human brain could be found within the so-called “Broca-Area” (the motoric speech centre, which is also responsible for gestures and mimic). – Ref.: Pulse modulation on making of or listening to music.

Our own (1988) examinations based on singular-picture sequence analysis of documentary material on fright reactions of blind-and-deaf-born children (Eibl-Eibesfeldt: 1957 – 1970 studies) detected such behavioural coordinations which gave reason to early postulate such organic representations as described above (Ellmauthaler: 1989: Lachen und Weinen in psychosomatischer Sicht. Available in German).

Ongoing work should prove that communication will be optimized in cases of organic-perceptual disorders by activating these well organized networks of Mirror Neurons. The particularly decentralized pattern of neuronal structures containing discrete functions creates hopeful chances for therapeutic and psychomodulatory applicabilities.

We see, for instance, realistic chances for the scientific analysis of the Mirror Neurons to provide post-apoplectic patients with a new proactive design of therapeutic measures:

By the means of watching and intrinsic re-producing motor actions, the CNS is able to save discrete movement patterns. Due to such learning processes, it seems evident that some of the functional abilities which have been lost during a cerebral insult can be re-activated by the utilisation of reconstructed networks between other disposable areas.

Dr. Giovanni Buccino, Parma, Italy, performed studies on that topic.

The Mirror Neurons were primarily described on Primates by Prof. Vittorio Gallese and Prof. Giacomo Rizzolatti of Parma, Italy. Mirror Neurons seemingly have a function in the preservation of a species, as they play a significant roll in the postnatal state-of-development, namely at the beginning of the “dyadic relationship” between mother and child. Towards the other partner, they address – and within this other individual they activate – highly corresponding feelings of happiness, lust or aversion, comparable to an undisturbed “resonance phenomenon”.

This makes possible an instant, just and complete emotional conformity between the partners: The “confirmative” smile of a neonatus – both, primate and man – is designed to grant the child essential acts of affection and care; it awakens “sympathy” in the meaning of (Greek:) **sum-** (sym-) = together with, **sum-ba.nw** (sym-baino) = correspond, **sum-pfescw** (sym-pascho) = be compassionate, in a further meaning also as: „receive at the same time“.

In cases of lacking chances for the activation of Mirror Neurons, e.g. at phone calls, by writing or reading a letter, one can easily find misinterpretations of the essential meaning within a message, the perception of which is always emotional. Congenital, for instance, is the coverage of face in situations of shame and flirt, in order to create intimacy; a gesture that will often be spontaneously “mirrored”.

The anticipation of cortical representations of these – hereditary – communicational abilities can be a landmark for any new, integrative providence in healthcare, up to music paedagogics and elaborated music therapy, in a broad content also for diagnostic measures, training of dyslectic patients and paedagogics in general.

Even more so, we may see an open field of deliberately-intended applications of that archetypical dyadic mirror-phenomenon within relationships of a private or occupational nature, e.g.

- Re-activation of the “intrinsic empathy“ and “primary social competence“ of the early childhood – which are, in many situations from the early infant to adult life, being extinguished by systems of re-enforcement and punishment)
- an effective way of leading negotiations and organizing intercultural teams – as the phenomenon shows a high-grade intercultural significance
- optimization of motivation
- enhancement of individual satisfaction on a job
- positive compliance of team members and, in case of serious training improvement of communication strategies as well as
- productive interaction between teams
- a diagnostic tool for early bonding disorders.

Mag. Dr. Volkmar Ellmauthaler

*specialist for psycho-medical issues as well as Coaching, HRM
and Supervision in hospitals and Clinics, post-gradual trainings
and “Preventive Psychology”*