Gernot Hauke, Christina Lohr and Tania Pietrzak

Moving the mind: Embodied cognition in Cognitive Behavioural Therapy (CBT)

ABSTRACT

Embodied cognitive sciences represent the view that cognitive processes are not possible without the direct participation of the body. Acting in any situation, the body has direct influences on cognitive, motivational and emotional processes, e.g. through its posture, facial expression, gestures, direction of motion etc. Up to now, such insights have been under-represented in the practice of traditional psychological therapies, of which CBT has a strong evidence base. This article shows the benefits that arise for CBT from the inclusion of the embodied cognition concept. In addition to the tried and tested methods of CBT, intervention methods can be developed which make it possible to efficiently process concrete problem situations by deliberately using the body. These bottom-up strategies offer several advantages: pre-lingual aspects, or aspects which are difficult to grasp in lingual terms, can be more easily identified and given a lingual format. It is also easier to pick up on clients who have fundamental difficulties with verbalization or only restricted access to their emotions. With the aid of specific embodiment techniques, emotions can be deliberately "manufactured" and their problematic regulation investigated. Certain positions in the room allow the embodiment of power and powerlessness, proximity and distance etc. Two case examples illustrate the potential of embodiment techniques.

Keywords: cognitive behavioural therapy – embodied cognition – embodiment techniques – embodied emotions

1. The body in CBT

The body receives some attention in CBT procedures in terms of assessing body sensations that accompany felt emotions, however in embodied cognitive science the central assumption is that the body is directly involved in and is part of these cognitive processes (Shapiro, 2011). There are an increasing number of discussions on the integration of embodiment techniques in clinical practice (e.g. Ottoboni, 2013; Fuchs & Koch, 2014; Leitan & Murray, 2014; Tschacher et al., 2014).

Third wave behavioural therapies place significance on the body, for example in the "Interacting Cognitive Subsystems (ICS)" approach (Teasdale & Barnard, 1993, Barnard, 2009). Sensory input and, in particular, body-related perception makes a direct contribution in the development of an emotional condition that manifests itself as intuitive feeling. This is clearly distinguished from the more intellectual or rational processes which make the person think, for example, about sadness and hopelessness. In a depressive state, both systems are tightly interlocked according to the authors. A cognitive therapy examining dysfunctional thought patterns leading to strong emotions can be augmented by body related perceptions and sensory features (i.e. visual, tactile) that also contribute to the development of the emotions in a bottom up process. Within the framework of this model concept, Teasdale (1999) suggests that the focus calls for a strategy on changing the attitude towards the inner experience. Here, as in other procedures of the third wave of behavioural therapy, this is done with the aid of mindfulness exercises (Heidenreich & Michalak, 2004). Here the body functions as an anchor for paying attention, e.g. in the attentive observation of physical sensations when breathing in and out. Subtle signals in various areas of the body can be registered in mindful awareness and thus represent important information sources for self-regulation, e.g. with regard to our needs and limits when we are currently caught in an inflexible action mode (Michalak et al., 2010; 2012).

In addition to this, mindfulness practice improves the sensitivity for the complex interaction between physical perceptions and cognitive and emotional processes and can thus be regarded as one antidote to ruminative processes (Michalak et al., 2011).

2. From the sandwich model of cognition to embodied cognition

The sandwich model of cognition seen in figure 1 below describes the classical view of cognition (Barsalou, 2015). The sandwich model is also reflected to a certain degree in the direction of effect as represented by the behavioural SORKC (Stimulus, Organism, Reaction/ behaviour, Contingency, Consequence) model that describes five determining factors as a basis of learning processes. It is an important basis for behavioural therapy case conceptualisation: a certain stimulus leads to a mental experience that results in a felt emotion with accompanying body sensations and certain physical actions. For example when a sad piece of news (S) leads to a collapsed body posture (R). Barsalou suggests that in the sandwich model the body is viewed as an "output unit" and that according to significant findings in embodiment research (Ottoboni, 2013; Leitan & Murray, 2014; Tschacher et al., 2014) the reverse direction of effect also applies.
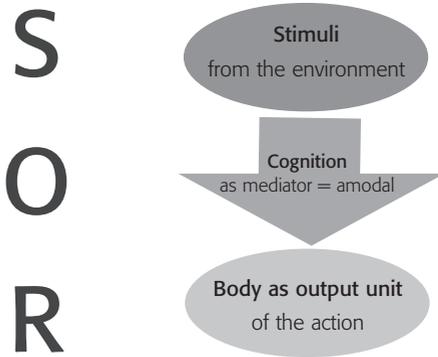
S

O

R

Stimuli
from the environment

Cognition
as mediator = amodal

Body as output unit
of the action

Fig. 1: The sandwich model reflects the classical concept of cognition

The new approach of Embodied cognition emphasizes that the interaction of the human being with his or her environment takes place through the body: he or she stands upright, reaches for objects, removes himself or herself quickly or slowly from objects or people, tenses certain parts of the body, changes gestures, breathing rhythm etc.

Environment

Body
is in
interaction
with the
environment

Cognition
= modal

Motor   Sensor

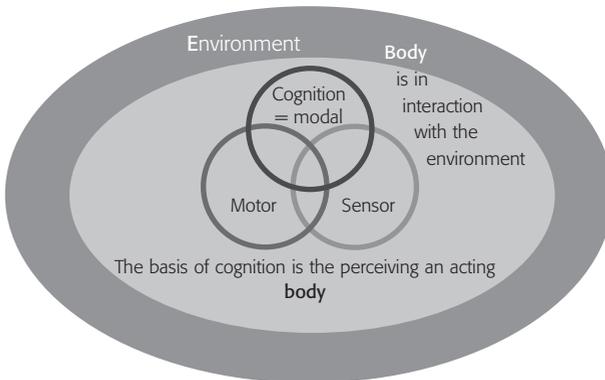The basis of cognition is the perceiving an acting
body

Fig. 2: The new approach of Embodied Cognition sees cognition as being embedded in and influenced by the body. Cognitive processes are anchored in the perception and in the actions of the body

Cognition can also be based on physical states and physical action.

On the one hand, cognitive states produce the corresponding physical states: if the person perceives, for example, a tool, the motor system anticipates the associated action and activates the corresponding motor programs (Caligiore et al., 2010; Gallese & Lakoff, 2005). *On the other hand*, physical states can also influence cognitive and affective processes. Here are some examples from the many findings: when human beings experience physical warmth or cleanliness they tend to feel socially included or psychologically clean (e.g., IJzerman & Semin, 2009; Lee & Schwarz, 2010). Hand or arm movements going away from the body, e.g. a thrusting motion to increase the distance, can be interpreted as avoidance behaviour (Neumann & Strack, 2000). Study subjects with avoidance motor behaviour made significantly more errors in problem solving tasks than individuals with approach motor behaviour or a neutral attitude (Riis & Schwarz, 2003). Another experiment illustrates the influence of body posture on information processing. Stepper & Strack (1993) were able to show that the adoption of an upright body posture considerably increases the feeling of personal pride when study subjects receive positive feedback. On the other hand, the positive feedback does not have such a positive effect if it is received in a stooped posture. Against this background, the findings of Brinol et al. (2009) are also quite clear. Here it was found that people sitting upright were more likely to believe their own claims and value judgements than when sitting in a stooped posture. When a power-oriented body posture is triggered in subjects by the experimenters – the study subjects do not know what it is about – the concept of "power" can actually be evoked (Carney et al., 2010). The subjects not only felt more powerful on the inside and more willing to take risks, but even displayed an increase in the testosterone level and a reduction of the cortisol level. With the aid of body posture and movement, gestures and, in some cases, breathing patterns, it is possible to trigger selective schemes of specific emotions, e.g. anger, sadness, shame, disgust etc. (Bloch et al., 1989, 1991; Duclos et al. 1989, Boiten et al., 1994; Philippot et al.; 2002; Flack, 2006).

Cognition is modal: We acquire our conceptual knowledge through the acting body (Fuchs, 2014). Accordingly, our conceptual knowledge is "embodied". It is developed and manifested with the aid of our sensory-motor system. Our conceptual system is anchored in our perceptive and motor system, uses it by neural means and is decisively shaped by it. All the understanding that we can develop about the world, ourselves and others can solidify in concepts that are formed by our bodies. How does this work in practice? According to more recent findings, the stimulus input is represented on a modality-specific basis, but not – as the classical approach postulates – amodally transformed (Clark, 1998; Glenberg, 2009; Smith & Semin, 2004). There is, rather, a multimodal representation of the experience by associative activation patterns. These are distributed over extensive neuronal networks, i.e. the sensory experience remains partially present. This type of perceptively anchored knowledge, represented by a multimodal network, is now available for subsequent cognitive processes. The neuronal net-

work of that multimodal representation of the experience is still networked with the individual modal states of the original experience. If, for example, I hear only the word bear, or am thinking about it, the modal states that were experienced for this category will be reactivated (Niedenthal, 2006; Winkielman et al., 2008). This neural reactivation simulates the modal states in such a way that it is as if I actually encountered a representative of the category "bear". What could this mean for work in CBT? Cognitive structures and concepts may be enhanced by participation of the body and by activation of the sensor-motor system.

According to the literature up to now, Embodied Cognition is bound to a specific representation format (Goldman & Vignemont, 2009). The representation format of the cognitively active person is connected with the sensory-motor system. It contains body-related aspects such as activities of the body, e.g. standing upright, moving to the left, and physical states, e.g. inner arousal. They also relate to the body surface and the inside of the body. At the same time, these formats contain features of the space within which the body is acting, horizontal and vertical dimensions such as near, far, up and down. They are known collectively as body formats or B-formats. Some of these formats have not only a descriptive but also an imperative content, which provides, for example, mouth and tongue movements as well as facial expressions and gestures in the production of language.

Cognition is based on simulation: A simulation generates the neurobiological state in the brain that occurs in the engagement with the representative of a specific category, e.g. anger. Simulations fulfil several functions in the representation of a category, e.g. elaboration of a wide range of predictions for the course of a situation as well as options for action control. The information processing is dynamic and not static as in the amodal representation of concepts. As the human being perceives as he or she moves, there is a constant mutual exchange between motor, sensor and cognitive aspects of the anger, which ultimately forms the mental representations and allows them to communicate dynamically with each other. Classical representation concepts on the other hand repeatedly used a single set cognitive path in the amodal architecture, which is associated with a more static process (Strack & Förster, 2009). In order for a simulation to take place, experiences of the respective category, in this case with anger, have to be established in the long-term memory. If someone experiences anger, then those areas of the brain become active with each other that process such characteristics. On the basis of many learning episodes an increasingly consolidated neuronal network is developed. This neuronal network represents the concept "anger" as it bundles information on the respective category. These extended networks are known as simulators (Barsalou, 2009). If we experience anger or just hear the word "anger", a subset of this anger network becomes active in order to simulate this experience in one of an infinite number of ways. These simulations are largely unconscious while they incidentally influence cognition and action. The development of consciousness of such simulations is linked with the experience of inner pictures. Such

simulations will not generate complete or accurate representations. They are largely incomplete and sketchy. This sketch contains aspects of anger which were frequently experienced in the past, e.g. tensing of the lower arms, clenching the fist, high degree of activation, vocational context etc. It represents anger temporarily in the working memory. Now anticipations regarding the demand characteristics of the anger situation become possible. The exact content of the reactivated material depends on how the selective attention in the momentary situation is oriented, and which information is specifically relevant for the person. Accordingly, cognition is not only "embodied" but also "situated" (Barsalou, 1999, 2009). Studies have shown clearly that both concrete (e.g. Estes, Verges & Barsalou, 2008; Tucker & Ellis, 1998 etc.) and abstract concepts (e.g. Chandler & Schwarz, 2009; Jostmann et al., 2009; Schubert & Koole, 2009) are anchored in the corresponding physical experiences and represented by the sensory-motor system. Simulation is the fundamental calculation process in the brain. It plays an essential role in the entire spectrum of cognitive processes from perception right up to social cognition.

3. Embodiment techniques: create space for movement.

The concept of "Embodied Cognition" represents not only an extension of the hitherto concept of cognition, but also opens up the possibility for the development of new forms of intervention in CBT. The representation format known as the B-format contains aspects of a body that interacts with the respective environment with its posture, with movements of body parts, with facial expressions and gestures, full-body movements etc. This means that this B-format should be able to unfold itself in the therapy room. Sitting and speaking could be extended by the targeted use of movement tasks.

How can this be realized? Let us recall that the cognitive processing of a concept is supported when the physical state concerned is generated. This triggers a simulation. The implication is that concepts partially originate in the subjective experiences anchored in the body and are simulated by the activation of the corresponding aspects of such experiences. Interventions that include the body have a bottom-up orientation. The comparison with the conventional approach in CBT shows that this has a largely top-down orientation and is thus complemented by a bottom-up approach.

Top-down orientation:
- seeks lingual expression for an experience, provides interpretation and often re-interpretation of experiences.
- identifies and examines belief sets, compares, relativizes and communicates what is experienced.
- elaborates problem solutions, targets, plans and interim steps, the timing of these etc.
- time perspective: covers the time span past to future. Arrangement of experiences in the life history, determination of their importance for the present and future, identity formation.

Bottom-up orientation:

- places the focus on sensory perceptions, physical perceptions and impulses, movements of the whole body and parts of the body in space,
- observes this in order to gain access to the roots of emotional experience, to the automatic impulses and pre-lingual processes.
- induces sensor-motor input, e.g. by probing, handling, tensing, moving, conscious breathing etc. in order to make automated processes and categorizations conscious.
- time perspective: focuses on the here and now, thus providing a chance of escaping the "memory trance", resisting automatisms and trying out alternatives.

CBT and the procedures of the 3rd wave of behavioural therapies which have already integrated concepts such as mindfulness, acceptance and emotional work can be extended and complemented by the embodiment techniques that focus on bottom-up processes. In order to represent the overall added value of this new approach, it is thus useful to describe these against the background of the general efficacy factors of psychotherapy as researched by Grawe (1994).

- **Therapeutic alliance:** Stereotype interaction scheme can be made visible and examined with the aid of the therapeutic alliance. The therapy of personality disorders in particular profits from this. Representing the therapeutic alliance actively in the room and positioning oneself with the body towards each other very quickly clarifies the various aspects of the relationship.
- **Motivational clarification:** A decisive factor for the success of the therapy is that the patient recognizes how the disorder originated and how it is being maintained. The elaboration of the individual motivational model profits to a special degree from embodiment techniques. This is because the understanding achieved about the body is more deeply anchored and generates fewer cognitive resistances.
- **Problem activation:** The problematic situations of clients are often associated with several emotions at the same time and, in some cases, with contradictory action impulses. Being able to understand and differentiate these is decisive for the success of the downstream acceptance and change processes that the client will pass through in the further course of the therapy. Embodiment techniques to deepen and reactivate emotions are especially effective in this work.
- **Mastery:** The elaboration of well-shaped targets, interim targets, behaviour plans and experiments is a central element of behavioural therapy work. If the body is deliberately integrated here, hurdles can be more effectively overcome and the motivation to change sustainably reinforced. The symptom therapy follows the standard procedures of CBT.
- **Resource activation:** An example of valuable resources are the personal values. The commitment to targets is reinforced by the implementation of these personal value targets. Anchoring values in body postures and movements makes it possible to give them concrete form and to exploit them as powerful companions for the change process in the everyday routine of the patient.

The accompanying training of **mindfulness** can be regarded as a basic condition for successful work with embodiment techniques. As well as the establishment of an observer mode, increasing the sensitivity for body signals is particularly decisive.

Mindfulness: Initiating body focus. In this step clients learn to become attentive observers of themselves and of the world around them. The required skills are best bundled in a method which is known in modern behavioural therapy as paying attention by mindfulness (Hauke, 2006; 2013). Once this step is successfully completed, it opens the door to a far-reaching way of working with embodiment techniques. The concept of "body focus" describes an attitude towards the body as a constituent part of the therapy: the change of body posture, facial expressions, gestures, movement style, breathing rhythm etc. changes its internal milieu and thus influences the emotional experience on a bottom-up basis. Interoceptive skills are improved when clients learn to also follow their own heartbeat. Furthermore, we have to proceed from the assumption that the experience in a real or imagined situation triggers a wide range of reactions which are usually not conscious and which at most can be physically perceived but not yet expressed in language. This requires (1) that the body is taken seriously as a source of information and (2) that one is also able to use this information. It is aimed in particular at the here and now of a situation. The clients are helped to adopt a positive attitude to themselves and enter into emotional contact with difficult situations, to observe their own behaviour, not to judge and not to give in to the rising impulses. Alongside the thoughts and feelings, all of the body signals are the subject of the observation. Paying attention in mindfulness undermines the tendency to automatically apply a firmly established scheme to a new situation, to the here and now and to react in the accustomed manner (Hauke, 2006). The precise identification of the felt action tendency and the associated cognition is present and thus situated, allowing alternative behaviour.

Therapeutic alliance: Grounding interaction in space. Even though the therapeutic alliance on its own is not a healing agent, it does represent an indispensable basis on which an efficient way of processing a problem can be developed. When a client feels comfortable in a therapeutic relationship is it possible to work more effectively. It is regarded particularly in the behavioural therapy context not as the sole efficacy factor, but as an important condition so that intervention techniques can develop their full effect (e.g. Schulte & Eifert, 2002). Embodiment effects apparently have a major impact in therapist-client dyads. In one study, for example, the extent of nonverbal synchrony was determined on the basis of the coordinated movements of the interaction partners (Ramseyer & Tschacher, 2011). The authors were able to show that higher degrees of nonverbal synchrony had a positive influence on both the perceived relationship quality and the whole therapy process. It turned out that higher nonverbal synchrony indicates a higher degree of symptom reduction and perceived self-efficacy. Work on the therapeutic alliance is particularly important when there are open or hidden con-

flicts between clients and therapists. This often reflects a dysfunctional interaction style that is also evident outside of the therapy. This is why it is worthwhile to make the therapeutic relationship a theme. Such situations are often an indication that both the affective and the target-achievement alliance have to be adjusted. This is a professional task that can become necessary at times in the course of therapy and clients are already prepared for it on the basis of the previous interventions. With a technique that uses the embodiment of power and psychological proximity or distance (Davis et al., 2011; Schubert at al., 2009) the client is encouraged to represent the therapeutic relationship in the room. Such a representation speaks more than a thousand words. Relevant or even controversial issues are quickly revealed by such a representation without too much sharpness and contrast effect (Hauke, 2013).

Motivational clarification. Getting the embodied emotional survival strategy. One way of allowing the client to understand their problematic behaviour and its origin and perpetuation is the so-called survival strategy of Strategic Behavioural Therapy (Sulz & Hauke, 2010), a representative of the 3rd wave of behavioural therapy. The survival strategy refers to the dysfunctional cognitive-affective scheme that, in the interest of the greatest possible need satisfaction, describes various strategies for approach and avoidance. The problems of our clients are best processed in a clearly defined situation (when, where, with whom). As the survival strategy refers to the satisfaction of fundamental needs, the initial focus is placed on the central need relevant to a selected problem situation. The strategy that is to serve the satisfaction of this need is elaborated. It is important to repeatedly put things in concrete terms. "Concrete" here actually means the reference to the self-observation protocol usual in behavioural therapy: time, place, action, thoughts, emotions, physical reactions etc., but with the difference that the client does not only report on this after the experience of the problem situation. A situation tends to be experienced as "more real" the more bottom-up information input is available (Barsalou, 2015). For example, a person will thus not perceive the simulation of a meal as real, because the bottom-up-oriented gustatory and haptic input, i.e. the taste, the consistency of the food etc. is missing. Even if the gustatory system is active during the simulation, the simulation will not activate those neural structures that would be associated with an actual tasting of the food. "Subjective realism" thus lies on a continuum. A simulation can in a certain sense be perceived as real, as it uses the same systems associated with the real event (e.g. systems that process information on space, time, action, affect, physical reactions etc.). Ultimately this feel for reality depends on how many bottom-up information sources are currently available. When working with a concrete, experienced situation it is a great help if one allows as many bottom-up information sources as possible in the therapy situation. If, for example, the client was standing up in the reported situation, then they should not be reporting it sitting down but rather standing up. If the client had been carrying a stack of books at the time, then this sensory information should also be made available by giving the client a stack of books etc. In principle: current events are characterized by closed loops of the sensor-motor processing. It is completely differ-

ent in the case of imagined events. These form open processing loops, whereby simulations generate anticipatory conclusions that are not completed by bottom-up feedback. They are thus not perceived as being as real as actual, current events that have bottom-up feedback.

Problem activation: Recognition and regulation of emotions using the body. The experience-based activation of the client's problem in the therapy session is a decisive efficacy factor for success. This brings in a structured procedure that exposes and helps to modify fundamental regulation problems on the basis of concrete problem situations (Hauke & Dall`Occhio, 2013, 2015). This type of work uses the already established skills of mindfulness as well as current findings for the embodiment of discrete emotions such as fear, anger, sadness, disgust etc. The changes of body posture, facial expressions, gestures, breathing rhythm and voice generate and regulate emotional states and also influence how these are processed. Prelingual contents are also elegantly registered here. This makes the therapy more precisely targeted and generally more efficient. Problem situations are generally associated with several often-contradictory emotions. These are made visible by the work in the so-called Emotional Field. It provides a precise picture of the efforts and struggles of our clients who in turn feel valued and validated. The problem is quickly identified. By using embodiment techniques, they gain clarity about primary and secondary emotions (Sulz, 1994, Fruzzetti et al. 2008). Not only basal, but also more complex emotions such as shame and guilt are understood more deeply in their mental function and used accordingly.
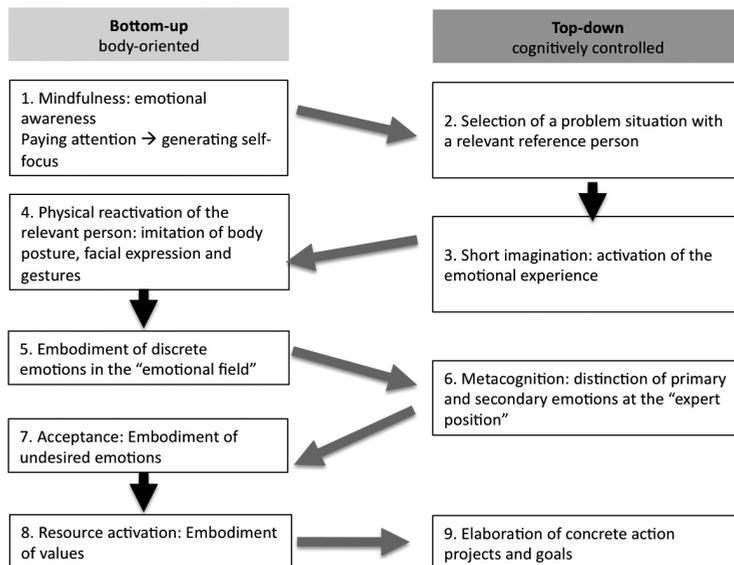

Fig. 3: Overview of the switch between top-down and bottom-up orientation using the emotional field as an example.

Mastery: Moving to solution. Psychotherapeutic action elaborates solution paths. Embodied cognition theory suggests a link between bodily movements and cognitive functions (Werner & Raab, 2013). So embodiment embeds the joint questioning, thinking, clarifying and target setting in various forms of body-related action. How can this be implemented in practice? We create a manageable structure in space (Hauke, 2013). The embodiment of a successful goal achievement is a path that leads forwards in space (Natanzon & Ferguson, 2011). It is defined by

- an initial state, known as the actual state
- a desired state, known as the end-state
- and a barrier that hinders or even prevents the transition from the actual state to the end-state

This sums up the therapeutic situation and offers a helpful structure for perception and action. An alternative approach has to be found that bridges the path from the actual stated to the desired end-state. These interconnections put any problem in a manageable format. Problem-related talks then end with the request to symbolize, with the aid of objects, the currently felt problematic actual state as well as the desired end-state in the future. The client is also requested to set up a barrier that blocks the path from the actual state to the end-state. In the sense of the embodiment perspective this simple spatial arrangement can be understood as a conceptual metaphor. It makes it possible to deal with quite complex issues by expressing them in simple body-related actions. We saw that the knowledge about concrete source domains (the starting point of a path, here the actual state) can be used as a basis for the realization of more complex concepts such as the initial state of an interactive problem which concerns, for example, a need frustration. Source concepts represent simple body-related interactions with the physical and social environment, e.g. the motion forwards to the desired state, from there the backwards motion to the actual state. We saw that these motions also incorporate a temporal significance. Forwards motions are associated with the concept of the "future" and reverse motion with the concept of the "past" (Miles et al., 2010). When we ask the client to place himself in the actual state and to move from there to the desired state, this simultaneously corresponds to the generation of future (Koch et al., 2008, 2009). These concrete and tangible source concepts, as well as the tension they generate between the actual and desired states help:

1. to understand more clearly what the mental actual state looks like and how it differs from the desired end-state
2. and to decide what is no longer tolerable in a situation and what the person no longer wants to be or what he wants to be in the future and what he wants to experience here.

The very concrete and tangible source concepts of actual state and end state help to capture abstract emotional and cognitive concepts as they arise in the state descriptions of the problematic starting situation and the target state, to represent them in simpler language picture

and to encourage simple body-related action. For example moving from the actual to the desired state. Thus speaking about the intention to distance oneself from a person is complemented by immediate action in space. The person is asked to represent this also with the aid of body movements, facial expressions and gestures. The difference to purely verbal exchange is noticeable. By the actuation of the sensor-motor system, by simple, body-related action, simulation processes are promoted that allow the understanding and development of abstract concepts that support rapid access to a broad behaviour repertoire.

Resource activation: Values in the flesh. Values can serve as a strong resource but they are relatively abstract cognitive constructs. They mislead us into ruminating on them and then often do not have the effect of a strengthening resource. An application possibility par excellence for the bottom-up embodiment techniques (Hauke, 2010). Ingrained dysfunctional attitudes can only be dealt with if they are countered with a force that is also ingrained, which can be activated reliably as required, and which helps to focus the attention in order to deal with the imminent, often considerable challenges. We achieve this by developing, analogously with the value attitude, a suitable body attitude and movement. In the chaos of difficult emotions and partial destabilization during a change process, it is always important for clients to maintain the red thread and to feel clearly why they are willing to subject themselves to this deep emotional work. The inner answer to this "why" should be a vitalizing, affectively positive evaluation. A strongly felt personal value is a guiding star which can provide power and orientation in the experienced turbulences again and again.

4. Case examples

The following two case examples serve to illustrate how cognitive behavioural therapy work can benefit from embodiment techniques. In the first case, a continuous alternation between top-down and bottom-up orientation was realised in the method.

Mr. A., 33 years old, bank employee, social phobia, characteristics of an avoidant personality.
The younger looking bank employee with a slightly stocky figure appears to lack self-confidence in the conversation. He answers questions very hesitantly. His body posture appears stiff, and his facial expressions are not very pronounced. He reports that he has been single for many years now and is very unhappy about this. He also talks about how difficult it is for him to develop and maintain social contacts and to motivate himself to engage in hobbies. At present he lives alone in a rented apartment, rarely goes out, and spends most of his free time watching movies. The reason for therapy is because his employer found that while his work performance was good, there were problems with his social competence. The client is now afraid that he will lose his job. He is also extremely worried that he will never find a female partner. He

describes his relationship with his younger, very spirited sister as difficult and in the following words: "As a child she needed so much attention from my parents, there was nothing left over for me." In school he was bullied by the other children due to his figure. The client feels particularly uncomfortable in the company of males of his own age and rejects the typical masculine behaviour. He describes himself as a sensitive man who likes to be seen as a buddy by women. He does not have any male friends.

Therapeutic alliance: While working with the client it was noticeable that he always hesitated for a long time before answering questions or talking about himself. The therapist thus suspected an accustomed interaction pattern of the client with important reference persons. He instructed the patient to represent the therapeutic relationship in space. He asked him to select both the felt psychological size and the distance between them as well as the degree of attention. The client went into a squat because he feels smaller than the therapist. He chose a distance of about 1 metre and asked the therapist to stand facing him. In the reflection afterwards the client reported that he could feel how near and attentive to him the therapist was. On the one hand he perceived this as very soothing and helpful. The therapist was an important companion to him on his journey. But he is also aware that as soon anybody becomes important to him, he tries to make himself small and to be very careful about what he says in order not to irritate or bore the person. He does this in an attempt to maintain the relationship and not to endanger it. It was then possible to use these insights for the further arrangement of the therapeutic relationship.

Motivational clarification: To elaborate the so-called survival strategy (Sulz, 1994), the self-focus was first generated with a mindfulness exercise and then the concrete problem situation activated with the aid of a brief imagination. The scenario involves the patient at a party with friends. He sees a woman he finds attractive but lacks the confidence the whole evening to make contact with her. This is very frustrating for him.

After the picture with the highest "emotional charge" is found within the imagination, i.e. the moment when he is standing with said woman at the bar ordering drinks, the scene is now brought into the space. For this purpose, the client is asked to briefly describe the appearance of the relevant person, i.e. the woman, to represent her in body posture, facial expression and gestures against a white wall and to put a typical sentence in her mouth. Then the client positions himself with respect to his relevant person. Through this physical activity the emotions associated with the situation and the typical behaviours are shown directly. He feels how he would like to flee. When he is far enough away he feels the erotic attraction. As soon as he perceives this, he feels shame. This gives rise to the emotional field (Hauke & DallÒchhio, 2013, 2015) of the client. In the joint reflection the survival strategy of the patient is elaborated. This is as follows:

- *Only when* I make myself invisible, wait and exactly observe my environment
- *and when* I am never risking conflicts, or assert myself or make the first step
- *then I find* security and affection
- *and avoid* disappointing others, being invalidated and rejected.

At the same time, the physical experience makes it clear to the client why he has had no success up to now with women and how his survival strategy makes an active contribution to this.

Problem activation: The exercise used to create the survival strategy, the so-called Emotional Field (Hauke & Dall`Occhio, 2013, 2015) can be used in particular to gain a better understanding of dysfunctional behaviours, and also serves to uncover and discriminate the often contradictory emotions. In the present case, as already described, the emotions shown were anxiety, erotic attraction and shame. After the survival strategy of the client is identified on the so-called expert position, the client returns to the "field". There he is guided by the therapist in physically deepening the body reactions. The therapist orients himself according to the physical reactions of the patient, encourages him to deepen them, and complements this with embodiment techniques. This allows the patient to feel the transitions between the various emotions. On the expert position, patient and therapist analyze which function the emotion has in this situation and in the life of the client. The distinction between the suppressed primary emotion and the blocking secondary emotions is decisive for the further work on the mastery strategies.

Tab. 1: Primary and secondary emotions gained in the Emotional Field of Mr. A

	The emotional field
Problematic situation	He meets an attractive woman at a party that he would like to approach
Relevant person	The (already known) attractive woman
Primary emotion	Erotic attraction
Secondary emotion (1)	Anxiety
Secondary emotion (2)	Shame

Mastery: At the start of therapy the client found it difficult to say what he would like to achieve in the therapy. His verbal descriptions are vague and refer only to things that he wants to get rid of. It is not possible to formulate positive therapy goals. The scenic representation of the actual/desired state brings about the desired change here. The client uses a symbol, e.g. a pencil, to mark the start and end of therapy in space. At the starting point he is asked to describe how he currently feels there in his body. He represents a heaviness in the shoulders, a lowered gaze and a lump in his throat. Then the client is asked to proceed slowly and consciously to the end of the therapy. At the end point he is again asked how he feels in his body.

The client says he is standing upright and feels relaxed. His gaze is directed towards the therapist and forwards. He says he feels very well in this posture and finds it very worthwhile. The next step involves naming the barriers that are preventing the patient from going directly from the ACTUAL to the DESIRED state. Proceeding from the ACTUAL position, the client places the barrier, e.g. a foam cube, on the path. As a barrier he names the fact that due to the barrier he can no longer see his goal and is again and again diverting from his path. He also says that he lacks the courage to actively deal with things, and has no support from outside. The insights from this work make it possible to selectively derive therapy goals as well as motivation aids. The lacking visibility of the goal is constantly recalled by a picture and a motto that the client chooses and places in a prominent position in his apartment. He also receives the task of assuming the body posture in the DESIRED condition every day in order to feel his goal. But the added value of the thus anchored therapy goals was also shown in the further course of the procedure. The client thus drew his motivation for the confrontation therapy in vivo in particular from the repeatedly reactivated body posture of his target state. It was also possible to deal with setbacks in the symptom therapy with the continuation of work in the emotional field. It was thus shown that, with the aid of the classical confrontation therapy in vivo, the work-related anxieties in contact with colleagues led very quickly to a significant improvement of the symptoms. Initially, however, it was not possible for the client to address his problems in relation to his search for a partner in the same way. Further attempts with the classical confrontation therapy failed as the patient physically froze every time and perceived himself as incapacitated. In the further work with the emotional field on another problem situation with a woman, it was particularly helpful for the client to be able to differentiate between the two secondary emotions and not to focus solely on the anxiety. In this case there was greater emphasis on the shame in relation to his own arousal and the fact of "becoming visible as a man" than in the work context. This was a good starting point for further emotional work and for learning strategies to deal with shame.

Resource activation: As the most important resource in his life the client cited dancing, which he had been practising regularly until becoming unemployed. In this circle of familiar people and with clear rules, he found it easier to make social contact than anywhere else. He also experienced himself there as successful as he had already started dancing when he was at school. He said that the brief moments on the dance floor was the only time he felt close to being the man that he would like to be. At the same time he said he was very frustrated that he had not managed to transfer this to other areas of his life or even to the bar of the dance hall. There his shyness immediately catches up on him. This is why he gave up dancing when he was tight for money due to being unemployed. Talking about his experiences with this hobby, it was quickly clear that the client also sees this as representing his central values. As a dancer he felt strong, knew what he wanted and was able to express himself. He was in charge and self-determined. The therapy then worked on harnessing these values for the life and the

change projects of the client. First the patient brought some of his favourite pieces of music, ones that triggered the feeling of strength. While the music was playing, the client was encouraged to experiment with various body postures and movements associated with his favourite dance. After this phase the client chose a body posture and a movement that in his view best reflected the "dancer" in him. The macro-movement was developed to create a routine micro-movement and, the patient chose a picture and a motto to match the body postures. Afterwards he not only took up his hobby again, but also used the posture in the work context before difficult situations, for example talking with his superior, or in his private life before going to a party.

The second case example shows how the initial treatment of a client exclusively with CBT can profit from embodiment-oriented work from emotional activation therapy (EAT, Hauke & Dall'Occhio, 2013, 2015).

Ms D, 51-year-old, IT consultant/contractor, borderline personality disorder, comorbid major depressive disorder recurrent episode with anxious distress.

Ms D is single female IT consultant living in her own home with her three adult children. There is hostile conflict in her family and a lack of social support. Ms D reported a close relationship to her daughter and one sister. After Ms D separated from her first husband after 20 years of marriage she was left with significant debt and was unable to find work for 2 years. Ms D remarried in 2014.
Ms D father deceased after a long battle with cancer. After her father's cancer diagnosis when she was a late teenager the family pressured her to support them. Ms D reported feeling tormented and terrified about her parents having two incompatible religions. During childhood Ms D reported confusion adjusting to a conservative way of life in the Middle East.

Diagnosis and formulation
Ms D meets DSM V criteria for borderline personality disorder 301.83 with moderate comorbid major depressive recurrent episode 296.32 with anxious distress (first episode 2007). On the Depression, Anxiety, Stress Scale (DASS 42), Ms D was placed in the clinically severe range for stress and depression and in the moderately elevated range for anxiety.

The presenting problems at time of referral in 2015 included: marital conflict, conflict with and between her two sons, employment instability and grief reaction to her son's physical ill health. Ms D reported symptoms of extreme fatigue, anger outbursts, self –destructiveness and chronic feelings of emptiness in the marriage. She also reported paranoid, obsessive and suspicious thoughts that her current husband was having an affair including compulsive checking on him. Ms D displayed flat affect, detachment, dissociation, blunting and difficulties remembering traumatic events. Ms D had moderate insight into her symptoms, but showed poor

judgement of her safety in her relationship with intimate others. A perpetuating factor was her belief that she has to subjugate her own needs to be loved, often over idealising others and minimising their disrespectful behaviour towards her.

Ms D had previous suicide attempt several years ago and was hospitalised, precipitated by the infidelity of her first husband and then their subsequent divorce. Ms D reported no identifiable previous mental illness prior to 2008. Protective factors included her love for her children, a supportive sister and daughter, intelligence, strong work history and ethics and her Christian religious beliefs.

Intervention

Ms D received fifteen treatment sessions. Two were for the assessment and formulation, cognitive behavioural therapy for ten sessions and embodied cognitive therapy for three sessions.

Cognitive Behaviour Therapy (CBT)

CBT is an efficacious and effective dominant paradigm in psychotherapy using Socratic dialog, guided discovery, cognitive disputing, behaviour experiments, exposure and self monitoring. The focus in on helping clients identify their unhelpful ways of thinking leading to strong negative problematic emotions and behaviours. Next through cognitive disputations from the therapist, clients' unhelpful thoughts are restructured to be more rational, logical and philosophical with the aim of reducing these strong negative problematic emotions and behaviours and replacing them with more positive ones.

Embodied cognition methods are relevant as an adjunct to augment CBT for psychological disorders that represent a translation deficit of body states into subjective feelings and self-awareness such as clients like Ms D with borderline personality disorder. Ms D displayed blunted affect and an over-regulated emotional style, clotted or limited verbal repertoire when recalling traumatic events, difficulties accessing her emotions during recall of adverse events. However out in the real world, Ms D could be under-regulated in her emotional responses to those close to her, showing serious episodes of sadness or fits of anger outbursts when provoked. Ms D was selected for Emotional Activation Therapy (EAT, Hauke & Dall'Occhio, 2015) to augment CBT due to her limited verbal repertoire and emotional blunting when stressed. As CBT heavily relies upon clients being able to verbalise their thoughts and feelings Ms D was considered to be a good candidate to illustrate her responses to CBT combined with an EAT approach. Thus Ms D's responses and outcomes to CBT alone were compared to her responses to an embodied cognitive approach after a course of CBT. First her goals were established which were to remain calm and be assertive around her husband when he makes comments about other women and to stop her checking rituals. Ms D was taught to relax using deep breathing and safe place imagery.

Tab. 2: Summary of CBT steps

Topic	Strategies & Responses
Activating Event, Emotional (EC) & Behavioural Consequences (BC)	Her second husband stated "Let's buy Becky (friend of Ms D) a sexy t-shirt!" **(EC):** Anxiety 8/10, Panic 9/10 (with 10 being the strongest of that feeling) **(BC):** Froze, told him it was inappropriate using an angry tone, lead to counter-aggression from him. Ms D shut down.
Unhelpful Cognitions & Strength of beliefs /10	**Beliefs:** 'I can't trust him. He might cheat on me(catastrophizing).' 6/10 'He doesn't love me' (jumping to negative conclusions). 8/10. 'I'd do anything to avoid being betrayed.' (subjugation of needs). 9/10
Link Between Thoughts and Feelings	Therapist (T): "Do you always feel panicky every time your husband makes comments about other women?" Ms D: "No sometimes I feel angry". (T): "And what are you thinking then?" Ms D: 'He shouldn't be doing this its disrespectful. I have a right to tell him off.' (T): "So why do you feel panicky and other times angry?" Ms D: "The different ways I am thinking about it.
Cognitive Disputing	(T): "Have you ever made inappropriate comments to someone you have loved?" (Socratic dispute) Ms D: "Yes" (T): "You can love someone and say something inappropriate at the same time?" Ms D: "I guess so." (T): "Do you know for sure you husband meant to be disrespectful, or is that just your assumption?" (Empirical dispute) Ms D: "I don't know 100% he meant to be disrespectful, it just seems like that." (T): "What are some other reasons why he said that?" Ms D: "He didn't think, or maybe he finds her attractive and felt safe in the relationship to tell me." (T): "And when you tell yourself that he's cheating how does that help you?" (Functional dispute) Ms D: "It doesn't." (T): "What evidence shows that your husband loves you?" (Empirical dispute) Ms D: "He says he does, he is physically affectionate, he asked to marry me and he buys me nice things."
Adaptive Thoughts and Behaviour Setting Homework	(T): "What would be a more helpful way of thinking about your husband's comment?" Ms D: "He does love me and didn't mean to hurt me. He's not deliberately being deceitful." (T): "When you think like that how do you feel?" Ms D: "More relaxed." (T): "Let's go back and re-rate the strength of your old beliefs." Ms D: 4/10. (T): "Please practice your helpful thoughts using your mood diary every time you notice yourself feeling panicky"
Concrete Projects Review	(T): "So how did you go practicing staying calm?" Ms D: "OK, I found it hard to do it for real. My husband started talking to an air hostess on the plane. They were hitting it off so so I felt panicky and couldn't think straight. We had a fight after I told him it was inappropriate and didn't talk for days."

Results

After 10 sessions during a 12-month period of CBT Ms D found it difficult to generalise her new way of thinking and behaving with her husband consistently. Pre to post intervention change scores on the Kessler Psychological Distress Scale (K10) showed a reduction in depression from 29/50 (moderate disorder) to 23/50 (mild disorder). Ms D continued to remain in the marriage, despite ongoing conflict and her affair suspicions and checking rituals remained. Ms D found CBT helpful but remained stuck applying her new way of thinking to regulate her emotions consistently.

Emotional Activation Therapy (EAT; Hauke & Dall´Occhio, 2015)

Ms D received three sessions of EAT over a 3-month period after a course of CBT. Strategies including the development of the survival strategy, attentional deployment, exposure to the problem situation, the emotional field, discrimination between primary and secondary emotions, deepening primary emotions, emotional mastery and concrete projects involving movement, gestures and key statements.

Motivational clarification: To obtain the survival the self-focus was first generated with a mindfulness exercise similar to the first case study and then the concrete problem situation activated with the aid of a brief imagination. The scenario involved the patient at the shopping mall with her husband and he stated to her "Let's buy Becky a sexy t-shirt". This was the picture with the highest "emotional charge" and was bought into the space. For this purpose the client was asked to briefly describe the appearance of the relevant person, i.e. her husband, to represent his body posture, facial expression and gestures against a white wall and to put the above sentence "Let's buy Becky a sexy t-shirt" as if in his mouth written onto a sticky note. The client positioned herself with respect to her husband in the room. Through this physical activity the emotions associated with the situation and the typical behaviours are shown directly. Her first impulse was to step forward and with a sweeping motion of her hand in the air as if to slap her husband's face. Then almost immediately her body slumped and she looked down to the floor stating she felt sad not being close to him and that she was losing her husband and she wanted to show him tenderness with her head down. This gave rise to the emotional field (Hauke & DallÒchhio, 2013, 2015) of the patient. In the joint reflection the cognitive-affective survival strategy of Ms D is elaborated as:

- *Only if I always* tolerate abuse and disrespect from family members and loved ones whilst subjugating my own needs
- *and never* show anger and set limits, ask for what I need
- *then I maintain* my relationships and keep the peace
- *and avoid* feeling empty and alone.

The physical simulation helped Ms D to see why she has not been able to stand up and assert herself with her husband until now and how her survival strategy stands in the way of achiev-

ing this goal. Ms D's fear of being alone blocked her anger (forbidden impulse) and instead sadness and tenderness prevented her from making an assertive response.

Activation of a Problem Situation and Development of the Emotional Field.

The emotional field used to create the survival strategy helped Ms D to gain a better understanding of her dysfunctional behaviours. It also served to uncover and discriminate between her contradictory emotions, as already described, these were anger, sadness and tenderness. After the survival strategy of Ms D was identified on the so-called expert position, she returned to the "field". There Ms D was guided by the therapist to physically deepen the physical reactions and the emotions.

Tab. 3: Primary and secondary emotions of Ms D gained in the Emotional Field

	The emotional field
Problematic situation	Husband and client are shopping, husband states "Let's buy Becky a sexy t-shirt"
Relevant person	Husband
Primary emotion	Anger
Secondary emotion (1)	Sadness
Secondary emotion (2)	Tenderness

Development of the Emotional Field

The therapist explained the purpose of the emotional field and defined each of the positions (neutral, expert, stop see Hauke & Dall'Occhio, 2013; 2015). The therapist and Ms D then went back into the emotional field remembering the problematic situation. As sadness was the first named emotion it was written on a card and placed on the floor to the distance Ms D chose between her husband on the wall and her body in space. Sadness was deepened to gain a more intensive emotional experience for 90 seconds by the therapist modelling the effector pattern (body was preparing to collapse, body flabby, breathing similar to crying and Ms D imitated breathing in through the nose as if sniffing and out through the mouth and sighing). Naturally and spontaneously anger emerged as the primary emotion and Ms D's sweeping motion with her hand returned. The therapist wrote down anger on a note and Ms D chose the distance to place this on the floor. Ms D stepped out to neutral position to regulate her sadness after having just deepened it. Anger was deepened for 90 seconds. The therapist modelled clenched fists with thumbs outside, foot forward to make an approach, lips pressed together, eyes looking directly at her husband, breathing in and out through the nose in short sharp breaths. Ms D giggled so the therapist encouraged her to step out to expert position and to say 'Stop you are blocking my anger' using a hand stop sign. Ms D then regulated her anger using the breathing and arm pattern of the neutral position. Ms D was invited to return to her anger and deepen it again. Ms D learnt that she no longer needed sadness to regulate her anger.

Ms D identified tenderness as another secondary emotion and this was deepened by model-ling the therapist tilting her head to the side, arms as if nursing a baby in her lap, small smile, mouth closed and breathing in slowly thorough the nose. Ms D spontaneously gave herself a hug as if to show tenderness towards herself. The therapist imitated the movement pattern to show embodied empathy for Ms D. Next the therapist asked Ms D to step out to the expert position again and they talked about what happed by focusing on the impulses to act with the primary emotion of anger and to reflect on the secondary emotions of sadness and tenderness and how they block her over regulated anger.

Emotional Mastery and Resource Activation

Ms D learnt how to use the emotional regulation of her anger, sadness, and tenderness to achieve her targets. First the primary emotion of anger was dealt with. This was achieved by developing, analogously with the value attitude of self respect and self care, a suitable body attitude and movement.

Anger: Targets were to show her husband the anger and not be afraid of expressing it. Ms D wanted to express that she won't stand for his disrespect or be swept aside by him whilst simultaneously using the sweeping motion of the hand to support her statement "I wont' be swept aside".

Sadness and tenderness: After clarification of the anger related issue Ms D wanted to use her sadness which she felt as a loss to cut ties and and her tenderness towards herself (the embodiment of her values of of self respect and self care) to tell her husband she is going to walk away from his disrespect and the relationship. This was supported by the body movement of turning on her heel, hugging herself and saying "Goodbye".

Resource Activation: Ms D agreed to practice using the embodiment of her values of self respect and self care to use the hand sweeping motion to support an assertive statement towards Mr D whenever he violated her value of self respect.

Outcomes

Results from EAT showed that Ms D left her husband after she realised that she was unable to gain respect and maintain safety and self-care in the relationship. Ms D experienced a period of intense sadness however she was able to rebuild her life quickly and she went on a spirit-ual holiday to rest by herself. Results on the K10 revealed a score of 19/50 (normal range). It is likely that the experience activating method of EAT was a catalyst for Ms D to transfer her learning in vivo from the session to the real world by allowing her bodily felt anger to be expressed and then to move safely away from her husband's disrespectful behaviour towards her. Instead of being afraid of her anger she went against her survival strategy and developed a new life strategy of being tender to herself, setting limits on others who disrespected her and she began enjoying her own company. It is likely that the combination of CBT and EAT, matura-tion effects and a strong therapeutic relationship influenced her good outcome. This case study

highlights how ECBT can augment top down CBT processes and can potentially speed up values driven behavioural outcomes.

5. Outlook

Take it physically and support simulation processes: Today there is considerable empirical evidence that it is important to include the body in cognitive processes. This gives rise to opportunities to develop innovative intervention methods. Neural association areas lead to a multi-modal representation (visual, auditory, tactile, proprioceptive, affective, etc.) of our experiences. In this representation, the direct experience is still suspended. In the therapy conversation these association areas are activated. Such a simulation requires the entire sensor-motor and affective system to reactivate the respective experience because it is represented in the B-format or multi-coded. In therapy we will often find that most of the goals that clients set themselves are initially more explicitly motivated. They often do not trigger any great enthusiasm. Bottom-up embodiment techniques are well suited for the multi-coding of implicit motives which gives rise to a greater sense of ease, joy and enthusiasm in pursuing client centred goals. Without much talking, the bottom-up approach quickly generates an intensive experience or enhances an existing experience, for example for the better understanding of certain interconnections. The therapeutic contact consists, therefore, not only in conversation, but also in action. Therapists stand up from their chairs and ask their clients to do the same. This approach activates clients and also the therapists. In a further step, the efficacy of this form of embodied cognitive therapy must be empirically tested.

References

Barnard, P.J. (2009). Depression and attention to two kinds of meaning: A cognitive perspective. Psycho-analytic Psychotherapy, 23, 3, 248–262.

Barsalou, L.W. (1999). Perceptual symbol systems. Behavioral and Brain Sciences, 22, 577–609.

Barsalou, L.W. (2009). Simulation, situated conceptualization, and prediction. Philosophical Transactions of the Royal Society of London: Biological Sciences, 364, 1281–1289.

Barsalou, L.W. (2015). Situated conceptualization: theory and application. In: Coello, Y. and Fischer, M.H. (eds.) Perceptual and Emotional Embodiment: Foundations of Embodied Cognition. Psychology Press: East Sussex.

Bloch, S. (1989). Effector Patterns of basic emotions: An experimental model for emotional Induction. Behavioural Brain Research, 33, 317.

Bloch, S., Lemeignan, M., Aguilera, N.(1991). Specific respiratory patterns distinguish between basic emotions. International Journal of Psychophysiology, 11, 141–154.

Boiten, F.A., Frijda, N.H., Wientjes, C.J.E. (1994). Emotions and respiratory pattern: review and critical analysis. International Journal of Psychophysiology, 17, 103–128.

Brinol, P., Petty, R.E., & Wagner, B. (2009). Body postures effects on self-evaluation: A self-validation approach. European Journal of Social Psychology, 39, 1–12.

Caligiore D., Borghi A.M., Parisi D., Baldassarre G. (2010). TRoPICALS: a computational embodied neuro-science model of compatibility effects. Psychological Review 117, 1188–1228.

Carney, D.R., Cuddy, A.J.C., & Yap, A.J. (2010). Power posing: Brief nonverbal displays affect neuroendocrine levels and risk tolerance. Psychological Science, 21, 1363-1368.

Chandler, J., Schwarz, N. (2009). How extending your middle finger affects your perception of others: learned movements influence concept accessibility. Journal of Experimental Social Psychology, 45,123–128.

Clark, A. (1998). Embodied, situated, and distributed cognition. In W. Bechtel, & G. Graham (Eds.), A companion to cognitive sciences (pp. 506-517). Malden: Blackwell Publishers Inc.

Davis, J.I., Gross, J.J, & Ochsner, K.N. (2011). Psychological distance and emotional experience: What you see is what you get. Emotion, 11, 2, 438–444.

Duclos, S.E., Laird, J.D., Schneider, E., Sexter, M., Stern, L., & Van Lighten, O. (1989). Emotion-specific effects of facial expressions and postures on emotional experience. Journal of Personality and Social Psychology, 57, 100–10.

Estes, Z., Verges, M., and Barsalou, L.W. (2008). Head up, foot down: object words orient attention to the objects' typical location. Psychological Science, 19, 2, 93–97.

Flack, W.F. (2006). Peripheral feedback effects of facial expressions, bodily postures, and vocal expressions on emotional feelings. Cognition and Emotion, 20, 177–195.

Fruzzetti, A.R., Crook, W., Erikson, K.M., lee, J.E., Worrall, J.M. (2008). Emotion Regulation. In W.T. O'Donohue, J.E. Fisher (Eds.), Cognitive behavior therapy: Applying empirically supported techniques in your practice (pp. 174–186). New York: Wiley.

Fuchs, T. (2014). Verkörperte Emotionen – Wie Gefühl und Leib zusammenhängen. Psychologische Medizin 25, 13–20.

Fuchs, T., Koch, S. (2014). Embodied affectivity: on moving and being moved. Frontiers in Psychology. Psychology for Clinical Settings, 5: Article 508, 1–12. DOI 10.3389/fpsyg.2014.00508.

Gallese, V., & Lakoff, G. (2005). The Brain's Concepts: The Role of the Sensory-Motor System in Reason and Language. Cognitive Neuropsychology, 22, 455–479.

Glenberg, A.M. (2009): Language and action: creating sensible combination of ideas. In M. G. Gaskell (Ed.): The oxford handbook of psycholinguistics. S. 361- 369.

Goldman, A.I. & de Vignemont, F. (2009). Is social cognition embodied? Trends in Cognitive Sciences, 13, 4, 154–159.

Grawe, K. (1994). Psychotherapie ohne Grenzen. Von den Therapieschulen zur Allgemeinen Psychotherapie. Verhaltenstherapie und psychosoziale Praxis, 26, 3, 357–370.

Hauke, G. (2006). Self-regulation and Mindfulness. European Psychotherapy 6, 19–52.

Hauke, G. (2010). Reinforcing goal commitment: Work with personal values in Strategic Behavioral Therapy (SBT). European Psychotherapy 9, 1, 93–116.

Hauke, G. (2013). Strategisch Behaviorale Therapie. Emotionale Überlebensstrategien- Werte-Embodiment. Heidelberg; New York: Springer.

Hauke, G., Dall´Occhio (2013). Emotional Activation Therapy (EAT): Intense work with different emotions in a cognitive behavioral setting. European Psychotherapy, 11,1, 5–29.

Hauke, G., Dall´Occhio (2015). Emotionale Aktivierungstherapie (EAT): Embodimenttechniken im Emotionalen Feld. Stuttgart: Schattauer.

Heidenreich, T., Michalak, J. (Hg.) (2004): Achtsamkeit und Akzeptanz in der Psychotherapie. Ein Handbuch. Tübingen: DGVT-Verlag

Jostmann, N.B., Lakens, D., & Schubert, T.W. (2009). Weight as an embodiment of importance. Psychological Science, 20, 1169-1174.

Koch, S., Holland, R.W., & van Knippenberg, A. (2008). Regulating cognitive control through approach-avoidance motor actions. Cognition, 109, 133–142.

Koch, S., Holland, R.W., Hengstler, M., & van Knippenberg, A. (2009). Body locomotion as regulatory process. Psychological Science, 20, 549-550.

Leitan, D.N., & Murray, G. (2014). The mind-body relationship in psychotherapy: grounded cognition as an explanatory framework. Frontiers in Psychology, 5, 1–7.

Michalak, J., Troje, N.F., & Heidenreich, T. (2010). Embodied effects of mindfulness-based cognitive therapy. Journal of Psychosomatic Research, 68, 312–313.

Michalak, J., Hölz, A., & Teismann, T. (2011). Rumination as a predictor of relapse in mindfulness-based cognitive therapy for depression. Psychology and Psychotherapy: Theory, Research and Practice, 84, 230–236.

Michalak, J., Burg, J., & Heidenreich, T. (2012). Don´t forget your body: Mindfulness, Embodiment, and the Treatment of Depression. Mindfulness 3, 190–199.

Miles, L.K., Nind, L.K., & Macrea, C.N. (2010). Moving through time. Psychological Science 21, 222–223.

Natanzon, M.; Ferguson, M. (2012). Goal pursuit is grounded: The link between forward movement and achievement. Journal of Experimental Social Psychology, 48, 379–382.

Niedenthal, P.M., Winkielman, P., Mondillon, L., & Vermeulen, N. (2009). Embodiment of emotional concepts. Journal of Personality and Social Psychology, 96, 1120–1136.

Niedenthal, P.M. (2006). Embodying emotion. Science, 316, 1002–1005.

Ottoboni, G. (2013). Grounding clinical and cognitive scientists in an interdisciplinary discussion. Frontiers in Cognition, 4:630. doi:10.3389/fpsyg.2013.00630

Ramseyer, F., & Tschacher, W. (2011). Nonverbal synchrony in psychotherapy:

Coordinated body-movement reflects relationship quality and outcome. Journal of Consulting and Clinical Psychology 79, 3, 284–295.

Riis, J., & Schwarz, N. (2003). Approaching and Avoiding Linda: Motor Signals Influence the Conjunction Fallacy. Social Cognition, 21,4, 247–62.

Schubert, T.W., Koole, S.L. (2009). The embodied self: making a fist enhances men's power-related self-conceptions. Journal of Experimental Social Psychology, 45, 828–834.

Schubert, T.W., Waldzus, S., & Giessner, S.R. (2009). Control over the association of power and size. Social Cognition, 27, 1–19.

Schulte, D., & Eifert, G.H. (2002). What to do when manuals fail? The dual model of psychotherapy. Clinical Psychology: Science and Practice. 9, 312–328.

Shapiro L. (2011). Embodied Cognition. Oxon: Routledge

Smith, E.R., & Semin, G.R. (2004). Socially situated cognition: Cognition in its social context. Advances in Experimental Social Psychology, 36, 53 –117.

Stepper, S., & Strack, F. (1993). Proprioceptive determinants of emotional and nonemotional feelings. Journal of Personality and Social Psychology, 64, 211–220.

Strack, F., & Förster, J. (2009). Social Cognition. In J. Forgas, & A. Kruglanski (ed.), Frontiers of Social Psychology, Vol. 7. Mahwah, NJ: Lawrence Erlbaum Associates.

Sulz, S. (1994). Strategische Kurzzeittherapie: Effiziente Wege zur wirksamen Psychotherapie. München: CIP-Medien.

Sulz, S., & Hauke, G. (2010). Was ist SBT? Und was war SKT? "3rd wave"-Therapie bzw. Kognitiv-Behaviorale Therapie (CBT) der dritten Generation. Psychotherapie, 15, 1, 10–19.

Teasdale J.D., Barnard P.J. (1993): Affect, cognition and change: Remodeling depressive thought. Hove: Lawrence Erlbaum.

Teasdale, J. (1999): Emotional Processing, three modes of mind and the prevention of relapse in depression. Behavior Research and Therapy, 37, 53–77.

Tschacher W., Junghan U.M., Pfammatter M. (2014). Towards a taxonomy of common factors in psychotherapy-results of an expert survey. Clinical Psychology and Psychotherapy. 21, 82–96.

Tucker, M., & Ellis, R. (1998). On the relations between seen objects and components of potential actions. Journal of Experimental Psychology. Human Perception and Performance, 24, 830–846.

Werner, K., & Raab, M. (2013). Moving to Solution: Effects of Movement Priming on Problem Solving. Experimental Psychology, 60, 403-409. doi: 10.1027/1618-3169/a000213.

Winkielman, P., Niedenthal, P., & Oberman, L. (2008). The embodied emotional mind. In Semin, G.R., & Smith, E.R. (Eds.) Embodied grounding: Social, cognitive, affective, and neuroscientific approaches (263–288). New York: Cambridge University Press.

Correspondence addresses

Dr. Gernot Hauke

Managementcoach, Supervisor, Lehrtherapeut | Rotkreuzplatz 2a | 80634 München
gernothauke@arcor.de | hauke@coachingacademy-cip.de
coachingacademy-cip.de | sbt-muenchen.com

Dr. Christina Lohr

Clinical Psychologist | Businesscoach | www.lohr-coaching.de | info@lohr-coaching.de

Dr. Tania Pietrzak

Clinical Psychologist and Director of Dr Tania Pietrzak Psychological Services Pty Ltd. 98 Tramway Parade Beaumaris Victoria | Australia 3193. | tpietrzak@bigpond.com