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Article

Embodying Cognition in Cognitive Behavioral Therapy

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Abstract: The Embodied Cognitive Behavior Therapy (ECBT) approach for the treatment of emotional disorders in clinical settings is presented. The model integrates cognitive behavioral theory, neuroscience and embodied cognition. ECBT draws from evidence of bidirectional effects between modes of bottom up (sensori-motor simulations giving rise to important basis of knowledge) and top down (abstract mental representations of knowledge) processes in psychotherapy. The paper first describes the dominance of the traditional mentalistic view of cognition and its limitations. Evidence for the embodied model of cognition and emotion is reviewed whilst highlighting its advantages as a complimentary process model to deepen and broaden talking therapies. An overview is given of the switch (e.g., the technique of balancing) between top-down and bottom-up orientation in the ECBT model as well as a clear description of the method for emotional regulation, acceptance of unwanted emotions and emotional mastery. ECBT builds on and extends the unconscious processes of the 'Interpersonal Synchrony' (IS) model identified by Koole & Tschacher [1], to enhance the therapeutic alliance for emotional co-regulation. A new idea is proposed that both embraces and extends the IS model: embodiment techniques of imitation and movement synchronization in the Emotional Field of our method be used in a conscious way to speed up the calming effects of co-regulation and the client's self-regulatory capacity. The paper ends with an outline of the criteria needed to become an embodied therapist. A case study is given highlighting these aspects.

Keywords: embodiment 1; CBT 2; interpersonal synchrony 3; therapeutic alliance 4; emotional regulation 5; emotional field 6; emotional mastery 7

1. Introduction

The body in Cognitive Therapy

Cognitive Behavior Therapies (CBT) have been the dominant treatment paradigm since the 1950s [2]. Cognitive Therapy [3] developed from cognitive science, where knowledge of the world

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occurs within a conceptual system that contains semantic information about a category. Knowledge is built up by links between categories [4]. According to the cognitivist tradition, this knowledge supports and controls other cognitive functions such as language, thinking, perception and memory. Thus, knowledge is abstracted from sensory/perceptual systems that originally encoded them, therefore concepts take on an 'amodal quality'. Perceptual information is lost or transduced when the concept is 'abstracted' from the sensory modalities that were originally involved in perception [4]. Therefore, cognition is viewed as independent of the medium, independent of the body, creating the mind-body divide (dual aspect theory) [5,6]. The implication of cognitivism is that successful adaption in a dynamic physical and social world relies entirely on internal abstract cognitive representations, and real-world action functions as a means of implementing internal rules arrived at by pure cognition [4].

Whilst CBT remains a dominant paradigm and represents one of the most effective 'evidence-based' approaches in reducing mental health disorders (e.g. anxiety, depression), there is also variation and complexity across the various 'cognitive' models. Furthermore, the central tenet of cognitive theory on which they are all based has been questioned [4]. The National Institute for Health and Clinical Excellence (NICE) endorses CBT because of its strong research base, however there are many disputes about the different methodologies used in randomized controlled trials across the different cognitive therapies. Whilst the NICE guidelines support CBT, they do not support the superiority of CBT over all other interventions [7].

The sandwich model of cognition is seen in Figure 1. It describes the classical view [8] which is also reflected in the direction of effect as represented by the behavioral SORKC (Stimulus, Organism, Reaction/ behavior, Contingency, Consequence) model that describes five determining factors as a basis of learning processes. The sandwich model serves as an important basis for behavioral therapy case conceptualization: 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 loss of job (S) is interpreted as 'terrible and awful with catastrophic consequences' (cognition of the organism) leads to a collapsed body posture (R) and withdrawal and lack of help seeking behavior to find a new job (K, C). The case conceptualization frame is important as it gives the therapist solid experience in analyzing stimuli, the presence of automatic thoughts and schemata as well as systematic logical errors in thinking which maintain negative emotional states and problematic consequences. Cognitive therapy aims to teach clients to notice, and then change negative thoughts which maintain the negative emotion and problematic behavioral outcomes. Cognitive therapy is a 'top-down' approach that critically assumes that the content of thoughts is the key causal variable in maintaining and exacerbating negative mood. Therefore, intervention requires changing cognitions or the degree of belief of the client's thoughts [4]. Barsalou suggests that in the sandwich model the body is viewed as an 'output unit' [8].

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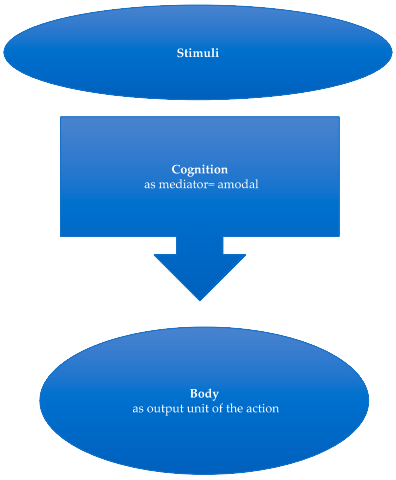

Figure 1. The sandwich model of cognition.

Limitations of cognitivism

Terms such as 'cognition' and 'information processing' are used interchangeably by cognitive therapists but they are not the same. By not clearly defining 'cognition' the role of emotion and body memory is not easily located only as cognitive systems [9]. Furthermore, motivational systems and attachment processes reflecting various developmental needs and stages are not engaged well by CBT approaches. Neuroscience with its activation of brain systems such as mirror neurons responsible for emotional attunement is confronting CBT with some major processing systems that cannot be classified as just 'cognitive' [9]. Furthermore, according to significant findings in embodiment research [10-12] the reverse direction of effect also applies in the sandwich model. For example, treatment that successfully reduces negative mood states also reduces the frequency, intensity and degree of belief of negative thoughts and schemas [13]. The bi-directionality principle of embodiment theory suggests that movement and body interaction comprise of basic level of sense-making with afferent feedback loops to phenomenal, emotional and cognitive levels [14, 15]. Finally, there are theoretical reasons to question the cognitive paradigm that views cognition as a processing of abstract symbols according to rules in a central processor like a computer that transforms inputs into outputs. In this view, it remains unclear how cognition interfaces with perception and action [16, 17].

2. The embodied model of cognition and emotion

Embodied approaches are based on the sensorimotor coupling between an organism and their environment [14] and have been evolving over the past 20 years. Embodied theory takes the position that cognitive processes are not possible without the direct participation of the body because it has direct influences on cognitive, motivational and emotional processes through its posture, facial expressions, gestures and direction of movement [18]. Figure 2 below shows that embodied cognition approach views cognition as being embedded in and influenced by the body

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[18].

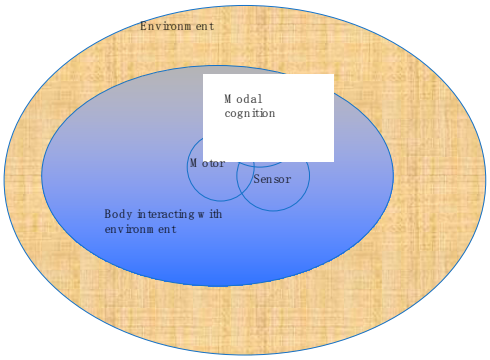

Figure 2. Embodied cognition.

Although there are different versions of embodiment theory from the moderate end [19, 20] to the radical end [21] of the continuum- all embodiment approaches have at their starting point the idea that psychological processes are influenced by body morphology, sensory systems, motor systems and emotions [22]. Emotions are viewed not just as categories we think about, but involve bodily changes that have strong effects on cognition and action [23]. Barsalou [24], after reviewing a large number of studies, concluded that knowledge involves the activation of a 'simulation process' as if interacting with the world. Thus, via simulation, knowledge is viewed to be stored as re-enactments of perceptual, motor and introspective states acquired during interaction with objects, people and our own bodies. A simulation can generate a 'feeling tone' as well as partial or complete reactivation of an emotion and body sensations that became associated with the concept and its modal reenactment in the past [4].

Fuchs [5] identifies three cycles of embodiment as: a) self-regulation involving a basic affective sense of self; b) sensorimotor coupling between a person and their environment; and c) intersubjective interaction or 'intercorporeality' involving intentional cooperation, joint attention and verbal communication. Gallese's [25, 26] important research on mirror neurons supports the relationship between perception and action in social cognition through a tight functional coupling or interpersonal synchrony between actions produced by the self and actions perceived in others. This also applies to emotional coupling and body resonance.

To summarize embodied cognition qualifies as a 'bottom up' process and suggests that: a) cognition and emotion can also be based on physical states and action; b) cognition is modal; c) cognition and emotion can be based on simulation. Evidence drawn from a number of studies of behavioral, neurophysiological, neuroimaging and lesion studies [6, 14, 27] support the idea that

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cognition and emotion is dependent on the body and its interaction with the world.

3. A unifying perspective for clinical psychology: integration of bottom up and top down modes

Psychotherapy to date has been predominantly a talking therapy relying on cortical 'top-down' mechanisms. Top-down oriented psychotherapies such as CBT have the following characteristics [18]:

- Seek lingual expression for an experience, provides interpretation and 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.
- Has a time frame perspective covering the time span of past experiences into future experiences.

Bottom-up therapies using embodiment mechanisms takes the opposite course with the following characteristics [18]:

- Focus is placed on sensory and physical perceptions and impulses, movements of the whole body and parts of the body in space.
- The client is asked to focus their attention and observe body processes to gain access to the roots of their emotional experience, to their automatic impulses and pre-lingual processes.
- Sensory motor input is induced by probing, tensing, moving, conscious breathing patterns in order to place automated processes and categorizations of the client into their conscious awareness.
- Time perspective focuses on the 'here and now', thus providing a chance of escaping the 'memory trance', resisting automatisms and trying out alternatives.

Taking into consideration the bidirectional effects that body influences the mind and emotions (bottom up) and also that the mind and language influences emotions and body (top-down) one can conceptualize a unifying perspective for psychology that integrates the two modes. From this perspective, there is a circular and reciprocal influence of subjective, intersubjective and physiological factors on each other. To quote Fuchs [5], "The brain both reflects and causes alterations in the relationships with the body, the self and the world."

Starting from the classical CBT perspective, Gjelsvik et al. [4] and Watkins [28] suggest that an integrated model of bottom up and top down modes is important to consider when working with emotional disorders. Top-down language based treatments they suggest, can over-rely on over-abstract processing and can fail to move vertically down the hierarchy from abstract to more sensory-perceptual modes of cognition. This can result in a horizontal move across the same level of hierarchy to remain in the conceptual realm, potentially weakening top-down control of emotion via language. Instead what can take place is a strengthening of maladaptive networks of abstract ideas about the self and the world. The result can be that clients, in their attempts to avoid retrieval of specific episodic information leading to high emotional disturbance, instead ruminate becoming over abstract in their thinking. The final consequence of over abstraction is difficulty in retrieving specific autobiographical memories [4].

An over-reliance on abstract, language-based processing to reduce negative affect can sometimes backfire if there is a discrepancy between the current state of sadness and the expectation to be happy. Thus, checking the degree of discrepancy and finding a mismatch can increase distress and discrepancy, so that the goal of being happy and feeling better is further away from reality [4, 28]. For example, experimental studies manipulated the subject's level of abstraction in an intervention during a failure task and demonstrated that concrete experiential self-focus (e.g. How the body feels relating to the experience**)** increased memory specificity, enhanced social problem solving and reduced emotional disturbance in depressed subjects compared to those that processed a failure task in a more abstract way (e.g., thinking about causes, meanings, consequences of the experience) [29, 30].

Research by Gross and John [31] and Joorman and Gotlib [32], showed that subjects who consciously expressed positive emotion with their facial expressions and body were able to counteract attentional focus on negative stimuli and their appraisal associated with depression. Subjects were more able to perform adaptive, mood improving cognitive reappraisals of ambiguous situations and challenges from consciously expressed positive emotion. This is a powerful example of an intervention that explicitly tried to change the level at which the negative material was processed, rather than trying to change the content of such material. In other words, without first changing the structure of thinking, but instead engaging the client in bottom up processes, the client's attention to the body in relation to the event can generate a new felt experience and decentralize the client from their thinking. In essence, the body can give rise to newer ways of thinking without the direct challenge of thought content as the client's body has changed the way they relate to problem from the inside.

Having stated this, top down therapies such as CBT have demonstrated evidence for reducing the pathology of clinical emotional disorders. Top down therapies not only change the client's implicit relational patterns, thoughts and behavior, but also recent studies show that changes occur in the functions and structures of their brains [5]. It would be therefore be wise to continue to embrace the effective top-down options of treatment. However, embodiment techniques offer simple and significant effects and a new understanding that explicitly changes the level at which negative material is processed.

Therefore, it would be prudent to integrate the two approaches as embodiment techniques have value in extending existing psychotherapeutic models that were derived from and rely mostly on narrower abstract information processing models of cognition. A satisfactory account of psychological interventions going into the future would be wise to consider both the embodiment perspective and the role of abstract conceptual thought to better understand the interplay between modal, analogical representations that actively utilize the perceptual, somatosensory, and motor resources and conceptual resources such as language like symbols. There have been some attempts to integrate the two approaches. For example, mindfulness based cognitive therapy (MBCT) [33] has the client shift from abstract language based intervention to a concrete, embodied and experiential mode of processing. Results showed that MCBT significantly reduced risk of relapse of depression in the most vulnerable clients by 43% even though they did not find an overall effect of MBCT compared to controls. In this line of research lots of findings suggest that embodiment can be complementary to CBT [33]. But what exactly are embodiment techniques?

Embodiment techniques defined.

Embodiment techniques are a defined practical procedure and includes the guidance for arbitrarily setting a particular combination of body-related features, e.g. expansive posture, direction of gaze, direction of movement, respiratory patterns etc. [18, 34]. This is guided by modeling (therapist as a model). Body-related sensations and impulses are carefully observed and described. Clients are supported in sensing themselves of "embodied self-awareness" to describe their experiences simply and directly. Conceptual thinking is omitted as much as possible. Particularly important embodiment techniques in the ECBT model use body-related features of specific emotions. We have taken them from the embodiment literature and call them emotion patterns. With the aid of body postures and movements, mimicry, gesture and partial breathing patterns, specific patterns of distinct emotions can be triggered, such as, for example, anger, sadness, shame, disgust. In using embodiment techniques distributive associative patterns including different brain areas are triggered. Following many learning episodes an increasingly entrenched associative network reflects the aggregate effects of neural processing distributed across these areas.

Embodied Cognitive Behavior Therapy (ECBT): an integrated complementary model of content and process.

The writers propose an integrated model of psychotherapy for clinical disorders which we coin 'Embodied Cognitive Behavior Therapy'. The ECBT model incorporates the benefits of integrating the embodiment approach to the traditional 'top-down' style of CBT. ECBT is a switching model that combines bottom up and top down work. We are therefore adding a processing level to the abstract cognitive level of CBT. We adopt the CBT methods of case formulation, past life history, goals for the futures and behavioral analysis. We switch to introducing the client to embodiment techniques that deliberately move clients vertically down the hierarchy to more sensory-perceptual modes of cognition to use the client's body to aid in the improvement of mood states and more positive cognitive reappraisals. This is done by having the client track their somatic markers and core affects. Clients then switch back to CBT as usual, reflecting and analyzing the functions of their specific emotions and what solutions for emotional regulation were gained by the body. Finally, the switch back to active cognitive restructuring of the client's maladaptive thoughts, which is signature to the CBT method, is already given a helping hand by the pre-verbal information provided by the body being made conscious. More adaptive behavioral plans are made relying on restructured thoughts, a new motto and a new body movement to support the plan in every-day life with the client's critical people. Figure 3 below shows the switch between top down and bottom up orientation in the ECBT model and the sequence of steps taken.

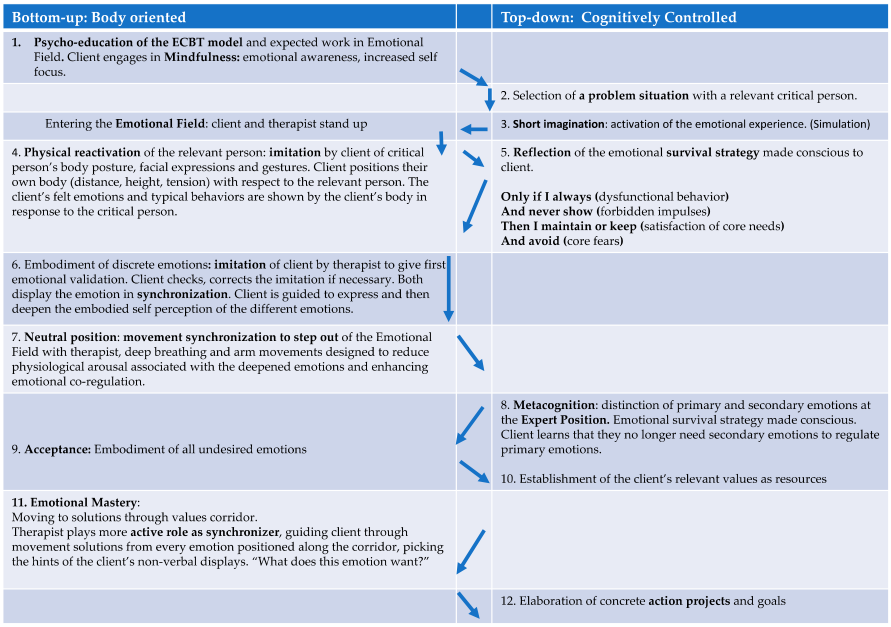

Figure 3. Overview of the switch between top-down and bottom-up orientation in the emotional field.

Preliminary data using single case study designs [18, 34] and ECBT for single couples [35] and groups of couples [36] show promising results. For example, after 20 hours of group couple ECBT intervention, the couple treatment group (compared to the control group) showed significant and meaningful increases in relationship satisfaction and empathy.

The stage and heart of the 'embodied' work style: the Emotional Field

By embodying cognition and emotion several advantages are highlighted. There is a speeding up of the interpersonal processes between clients and therapists. There is also efficient processing of the clients' concrete problems by deliberately using the body in a simulation. Furthermore, pre-lingual processes and emotions are made conscious, easily identifiable and given a lingual format to be reflected upon. Specific embodiment techniques such as imitation and synchronization as well as the deliberate manufacturing of client's emotions in the stage and heart of the 'Emotional Field' help clients to develop emotional regulation. The Emotional Field is an experiential domain mostly defined by putting the observation of the client's body (nonverbal, displays, somatic markers) to the foreground (What does the body want to do?). It is shown below in Figure 4.

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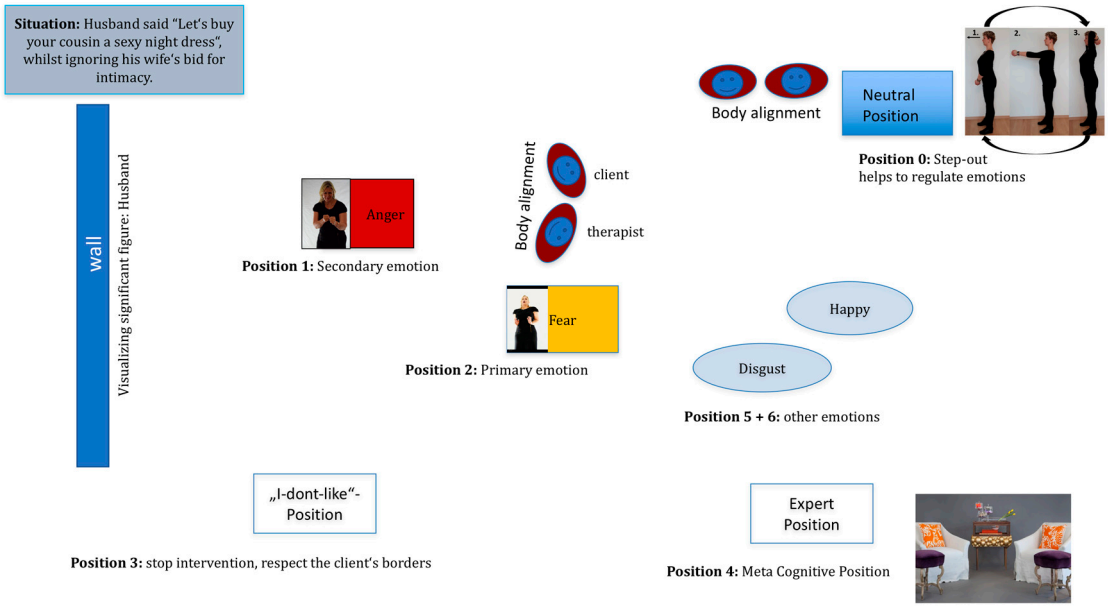

Figure 4. Hypothetical Emotional Field of a client.

In the Emotional Field the communication is driven using the embodied-self (embodied self-perception) based on bodily sensations, immediate sensing and feeling in the present moment in reaction to the problematic person. Clients can also step out of the Emotional Field in the Neutral Position when their felt emotions are too under-regulated and physiological arousal is high. The step out procedure is designed for emotional containment and de-escalation through a deep breathing exercise in movement synchrony with the therapist with accompanying arm movements by cupping the hands and moving them in an upwards direction above the head and then back to resting position. In the Expert Position clients can engage in conceptual self -perception and reflection to identify and name the discrete emotions in the Emotional Field and the function of the emotions for self and interactional regulation. Here in the Expert Position, clients switch back to language, concepts and thought, using their rational and logical processes.

In order to represent the overall added value of the ECBT approach it is useful to describe the embodiment techniques against the background of the general efficacy of psychotherapeutic factors [37]. These include the importance of building the therapeutic alliance, motivational clarification, problem activation, mastery and resource activation.

Therapeutic alliance

The therapeutic alliance is an important psychotherapeutic factor linked to efficacy in client outcomes across all methods of psychotherapy. However, the ECBT model goes one step further viewing the strong development of the therapeutic relationship as an important embodiment technique. Our embodiment techniques of working with the therapeutic relationship is guided by the pioneering Interpersonal Synchrony (IS) model grounded in neuroscience [1]. In their IS model, Koole and Tschacher [1] propose that the therapeutic alliance develops unconsciously and spontaneously as a consequence of interpersonal synchrony (also known as inter-brain coupling) between the therapist and the client. The strength of the therapeutic alliance is an important

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precursor for the later effectiveness of intervention techniques to develop their full effects [38 39]. Furthermore, interpersonal synchrony between the client and therapist fosters the therapeutic alliance which can act as a tool for adaptive emotional co-regulation between them. The client's self-disclosure [40] and the wish for both the therapist and client to develop a positive relationship enhances the powerful effects of synchronization between them [37, 39].

Emotional co-regulation is linked to synchronization of non-verbal behavior [41, 42]. Movement synchrony has been shown to aide emotional sharing, motor empathy, mutual understanding and adaptive emotional-regulation [1]. Therefore, the idea of having an embodied therapist seems to be attractive for the building of the therapeutic relationship. So embodiment techniques such as the mutual timing of responses including imitation, movement synchronization, eye gaze, breathing, posture, word use (content and function, tone/pitch) build the therapeutic alliance and thus can enhance affective co-regulation.

The IS model of psychotherapy has three levels of processing speed on three different time scales. The first and fastest level of the IS model involves a perceptual motor process that occurs within 10 seconds via movement synchrony (of face, eye gaze, breathing patterns and whole-body movements) promoting inter-brain coupling between the therapist and the client. The inter-brain coupling then facilitates the next more complex social-cognitive level of processes constituting the alliance, which occurs from 10 seconds to one hour. This includes the mutual sharing of subjective experiences involving common language and reasoning. These more complex forms of information processing both build on the perceptual motor processes and are grounded in them.

At the third level, taking up to several weeks to years to develop, affective co-regulation emerges which comprises of joint regulation of affective responses and their corresponding physiological correlates. Although co-regulation can often occur automatically through synchronization of the client's and therapist's motor movements, co-regulation requires more than automatic physiological matching between the therapist and the client. An embodied therapist is required to actively, and explicitly use experiential dynamic techniques for co-regulation that either up or down regulates the client. By responding to the client in a varied way both the therapist and the client return towards a homeostatic balance and to keep the interaction contained within healthy limits [1, 43]. At the third processing level, there is differentiation between explicit and implicit emotional regulation for the client. For explicit emotional regulation to occur Koole and Tschacher [1] propose that it is mediated by common language (linguistic alignment, goal related language). However, the awareness of the three levels of process is not made explicit to the client by the therapist in the IS model.

This paper builds and further expands on the unconscious processes of the IS model to enhance the therapeutic alliance. A new idea is proposed that the explicit processes of imitation and movement synchronization be used in a conscious way between the therapist and client. The deliberate incorporation of synchronized specific emotional, facial, gestural and whole-body mirroring/imitation mechanisms including breathing patterns of the therapist with the client thus create a first emotional validation experience for the client in the Emotional Field. The client is given a foreshadowing of this process in psycho-education prior to stepping into the Emotional Field. Thus, imitation and movement synchronization is implemented as a shared tool in the Emotional Field to avoid rejection by some clients. The client is of course not mirrored continuously and is given a break from this process to reduce any self-consciousness and intensity or annoyance,

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when they return to the expert position in the chair or when the therapist and the client are just 'talking'.

If this synchronization process is not made conscious to the client, some may react defensively when they become aware of the mirroring process in therapy. An embodied therapist of course is well aware of his or her own interoceptive impulses and is always 'on' with the idea that they can also deliberately activate the client's emotional regulation processes even in the chair by down-regulating and moderating their own emotional mirroring responses via more moderated facial expressions, softer tones and slower breathing.

Peri et al., [44] explored the use of therapeutic embodied simulation and mirroring in helping clients with post-traumatic stress disorder to down regulate during exposure to trauma memories. In this process, the emotional responses of the client are transferred to the therapist through embodied simulation. The therapist experiences viscerally the client's pain which is expressed in facial imitation. Then the therapist activates their own emotional and cognitive regulation processes, which moderate their own emotional response. This in turn is then expressed to the client in a more neutral facial expression. These modulated emotional responses are mirrored back to the client, who is helped by experiencing painful emotions in a more modulated way thus exerting some containment and control over painful, distressing emotional responses.

However, when in the Emotional Field of our ECBT model, explicit embodiment techniques such as imitation and movement synchronization can have positive effects on the therapeutic relationship which can be viewed as a first tool for emotional validation and co-regulation. The ECBT model also includes explicit and conscious emotional acceptance and emotional mastery processes (Figure 5 below) thereby engendering a permanent change between all three levels of processing/feedback loops as proposed in the IS model. We view an important integration of the IS levels of processing model into our ECBT model as previously depicted in Figure 3. Level 1 (Perceptual-motor processes) of the IS model could be depicted in our ECBT model by enhancing the therapeutic relationship unconsciously via movement synchrony that occurs during the mindfulness exercises, the selection of the problem person, the short imagination and the reactivation of the client's relevant person, which is imitated by the therapist. Level 2 of the IS model (complex cognition) fits well into our Step Out (Neutral) position. Level 3 of the IS model (Explicit and Implicit Emotion Regulation) is similar to the Expert Position and in the working processes of the Emotional Field.

Motivational clarification: getting the embodied emotional survival strategy.

The client's insight into how their disorder originated and is maintained is an important factor for the effectiveness of client outcomes. One way of helping the client to achieve this is to use the survival strategy method emanating from Strategic Behavioral Therapy [45] (seen in Figure 3). The survival strategy is the client's dysfunctional cognitive-affective schema that in the interest of greatest possible need satisfaction, describes the various strategies the client employs for approach and avoidance in their social interactions. In the ECBT model, the client's problems are processed in a clearly defined and concrete specific situation (when, where, with whom) with a focus on the client's central needs related to their selected problem. Then the survival strategy that is to serve the satisfaction of the client's need is elaborated by the therapist and written down to share with the client. By using an embodied simulation drawing from bottom up input, the client does more than

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just report on the event after it happened, but instead experiences the 'event' in the here and now. The simulation can be perceived as real by the client as it uses the same systems associated with the real event (neural networks that process information on space, time, action, affect and physical reactions).

Problem activation: recognition and regulation of emotions using the body.

The problematic situations of clients are often associated with a crossfire of several emotions at one time, some with contradictory action impulses. Part of the therapist's job in using the ECBT method is to help the client understand these different emotions and to differentiate these so that the client can accept the unwanted emotions to allow a change process to occur. Embodiment techniques in the emotional field reactivate the client's emotions which are then deepened by specific embodiment techniques. Work in the emotional field brings in a structured procedure that exposes the client's emotions and then helps the client to modify fundamental regulation problems on the basis of concrete problem situations [46]. By using embodiment techniques, clients gain clarity about their primary emotions which are often forbidden and blocked by secondary emotions.

Resource activation and emotional mastery: moving to solutions.

The client's personal values serve as strong resources [18, 47]. When values are just talked about and reflected on they become relatively abstract cognitive constructs, leading to the possibility of rumination on them rather than acting on them as a strengthening resource. The commitment to concrete goals, targets and behavior plans is reinforced by the implementation of these values. Anchoring values in body postures and movements makes it possible to give values concrete form for the client and to use them as powerful companions like guiding stars for the client's change process in everyday life. In the ECBT model, we achieve this by developing analogously with the value attitude, a suitable body movement, picture and motto to reflect the body posture of the value.

After establishing the relevant value as a resource, the therapist encourages the client to enter the passageway of the corridor. Next a defining path is set which has a start point (How body feels in actual state) and end point (How body feels when the client has reached their desired state) (Figure 6). An image and motto is picked for the end state and the client shows a body posture or movement that is matching to the image. The therapist imitates the client's embodied future. In the values corridor, a defining path of change is established and the client moves forwards through each emotion identified from the Emotional Field which is positioned along the corridor in a definable space with ropes and markers towards a movement solution. Here the therapist can change in following and taking the lead. The therapist usually plays a more active role in the corridor, acting as a synchronizer, a guide and kind of dance teacher. The therapist encourages the client along the corridor to embody each emotion and then to feel for a movement solution that will help the client get to their embodied future, picking up hints of the client's non-verbal displays. In emotional mastery of the ECBT model, synchronization of the therapist's movements with those of the client during a guided interaction in the values corridor leads to prosocial consequences such as greater rapport, feelings of closeness between the client and the therapist [48, 49].

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Embodied cognition theory suggests that there is a link between bodily movements and cognitive functions [50]. Here the embodiment of a successful goal achievement path is one that leads forwards in space [51]. The corridor is defined by an initial state (see Marker 1, Figure 5) known as the client's actual state as well as a desired state (see Marker 2, Figure 5) known as the end state. Forwards motions are associated with the concept of 'future' and reverse motions with the concept of 'past' [39]. Therefore, by asking the client to place themselves in the actual state and move towards the desired state, this simultaneously corresponds to the generation of future [52]. These tangible and concrete source concepts and the tension generated between the client's actual and desired states helps the client to understand more clearly what the actual mental state looks like and how it differs from their desired end state. It also helps the client to decide what is no longer tolerable in an actual situation and what the client wants to experience and be like in the future. The final step in the ECBT mastery phase switches back to expert position, where conceptual talk again emerges between the client and therapist to set concrete action plans and goals for homework.

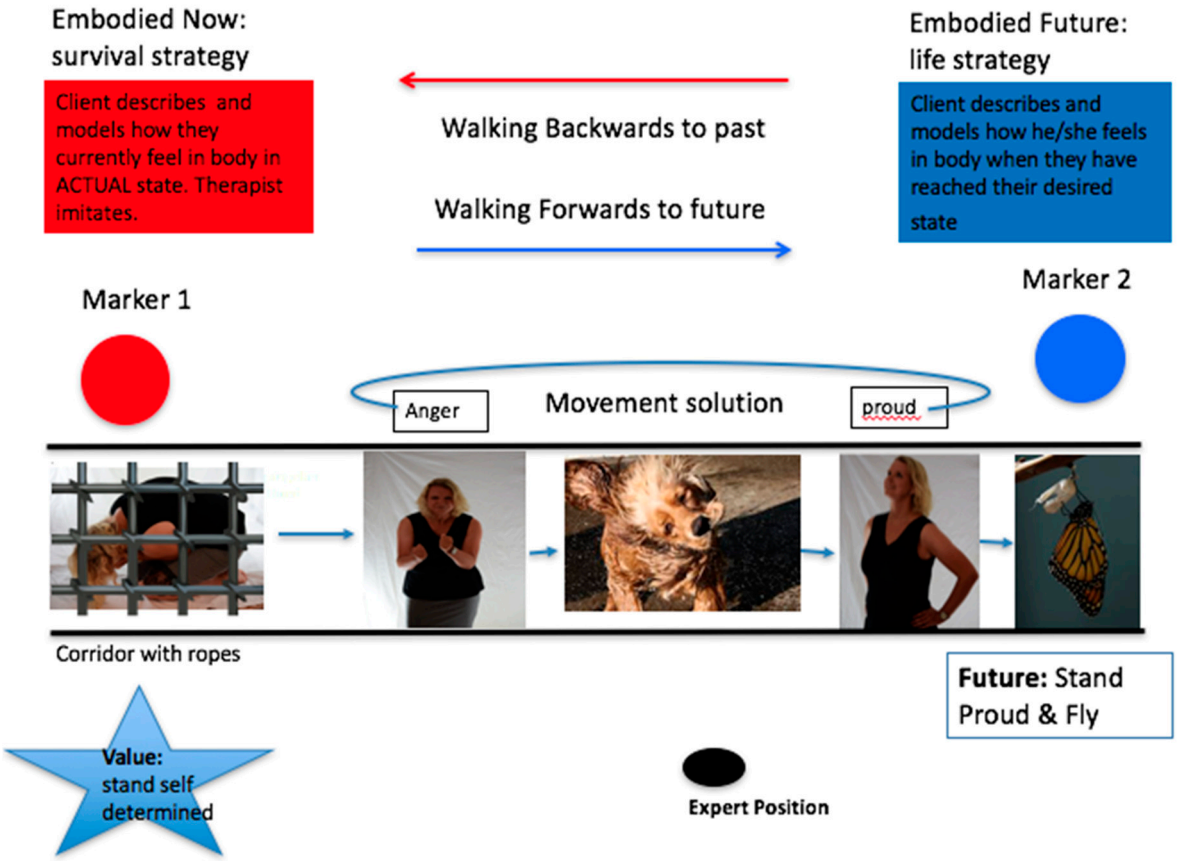

Figure 5. Emotional acceptance and mastery.

4. Becoming an embodied therapist: developing an embodied therapeutic attitude.

How does a therapist develop an embodied therapeutic attitude? The writers attempt to address this important clinical question whilst simultaneously bridging the gap between embodiment theory and embodiment practice for therapists working with clinical populations. The embodied therapist must take risks to conduct their therapeutic sessions out of their chair. This

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means as an embodied therapist, you must move your clients out of their chairs too. This not only requires adequate spacing in the room to set up the Emotional Field but also having confidence and trust in one's own body. This does not mean you have to be an elite athlete. However, body practices outside of therapy (e.g., Argentine tango for movement synchronization) go a long way to helping the therapist develop a mindfulness attitude towards their own body. Therapists can feel how their bodies move and feel in space, how it feels when alone and how it can feel in synchrony with the movements of others in close contact to develop their own embodied empathy mechanisms.

For therapeutic work with embodiment techniques it is not only necessary for the therapist to recognize and individually identify his own feelings and body senses. The therapist needs the ability to sense mounting impulses and either channel them to an adequate action or to down-regulate them, and to be aware of these mounting internal needs, but when necessary be able to push them aside and postpone discussing them until a later point. This means that therapists working with embodiment techniques need to have a routine themselves to train their own interoceptive abilities and to establish active mindfulness. In this way, the therapist experiences directly which hurdles need to be overcome to build a daily routine and to establish discipline, and thereby can serve as a model for the client.

Criteria for becoming an embodied therapist

The following criteria have been developed by the writers as a guide and are by no means an exhaustive list. The writers are all practicing therapists implementing the ECBT model regularly with real world clients in clinical practice. Some of us are researchers too, fully familiar with the theory of embodied cognition and emotion and how it has been applied in experimental conditions. Therefore, we have a strongly developed sense of theory, and familiarity and practice with the clinical application of the ECBT model. The writers also routinely seek supervision from each other to further develop our ECBT techniques and their applications with clients. It is from this knowledge and experience that the writers have elicited the following criteria below.

ECBT therapists would profit from having a solid theoretical and practical background of:

- Ability to formulate a case conceptualization. As a starting point, solid experience in analyzing stimuli, conditions and context following CBT protocols. This frame is important standard in ECBT too and gives support to adjust the bottom up work. Strong practical training in the CBT method, especially in how to dispute maladaptive cognitions.
- Modern theories of emotion regulation processes (see attached reference list as a guide)
- The function of and appearance of discrete emotions (both simple and more complex).
- How to develop an emotional survival strategy
- How to develop a reaction chain (looking for both primary and secondary emotions)
- Theory of embodied cognition based on neuroscientific research
- How to construct an Emotional Field and a Values Corridor for emotional mastery
- Emotional affector patterns (how to deliberately bring about emotions in the client through the use of specific breathing techniques, facial expressions and whole-body postures).
- Mindfulness and interoception training
- Processes of synchronization and imitation

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- Understand the difference between top down abstract conceptual work and bottom up embodied self-perception and the different use of language to elicit the switch. For example, the language the therapist uses to elicit the client's conceptual self-perception involves getting the client to talk, reflect, hypothesize, predict, analyze, dispute thoughts, rationalize, think about thinking, think about feelings and body sensations. Often here the therapist's language adopts more of an analytical exposition. Whereas use of bottom up language designed to bring the client into the process embodied self-perception should be kept simple to help the client gain a deeper exposition (E.g., "What does your body want to do now?"). Be aware of and be able to keep a strict difference in the use of therapist's language to bring about these different states in the client.
- As ECBT therapists, a lot of attention is given to the process and the bottom up work, not necessarily just the content of thoughts.
- Experience in giving attention to the client's signals from their face and full body as important sources of emotion, threat and information and to place these non-verbal sources of information into the process.
- Keenly able to observe variations in the client's postures, movements and incomplete fragments of movements to identify potential avoidance tendencies or blocked approach tendencies.
- Have experienced the ECBT model personally. This could be achieved by joining a self-experience group run by a workshop leader in the method of ECBT. This will ensure that as an embodied therapist you know your own emotional survival strategy and reaction chain with clear knowledge of your own primary and secondary emotions and how to develop emotional mastery. This self-experience will help you as a therapist to know when your emotional survival strategy is being activated by your clients in therapy and how to regulate your emotions so that impulsive behaviors by the therapist are reduced.
- Be able to split attention between self-focus (how my body feels, what am I thinking, what does my body want to do?) and interaction focus (how well am I synchronizing with the client, tuning into their emotions, noting their non-verbal behaviors, how are we together, what does the client's body want to do?) whilst interacting with the client.
- Recognize own body sensations and feelings and know how to use these in the therapeutic alliance for containment and homeostatic processes.
- Know how to use the three dimensions of embodiment (distance, height, intensity/speed) in the room.
- Have a kit of resources ready to use for the different embodiment techniques (chairs, ropes, tape, weights, white board, cards, teddy bear, blanket, butchers paper, values cards).

Case study.

A 38-year-old accountant comes to the practice suffering from exhaustion and depressive moods. She is fighting to keep not only her job, but basically to keep the entire company going, because the company has moved into the red. After a colleague and her direct boss went on sick leave, she has been running the entire business practically alone. She does overtime daily because in general she feels responsible for everything and even on weekends cannot leave her work behind. She is suffering from lack of sleep and an inability to concentrate. In addition, she has been

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suffering from stomach and neck pain for many months. Often, she feels beaten down, sad and helpless, because no one supports her. She comes to the session not having completed her set homework from the session before and then angrily blames the therapist because she is not getting any better. An unembodied therapist unaware of their own and the client's emotional survival strategy is likely to have a problematic outcome in this scenario as shown in Figures 6 and 7 below.

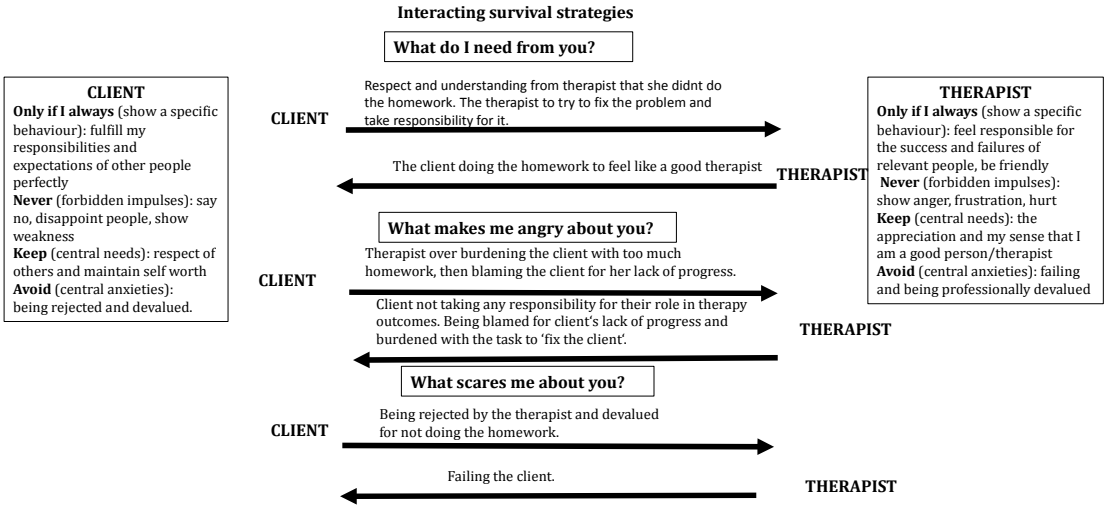

Figure 6. Hypothetical interacting survival strategies between a therapist and a client resulting in escalation.

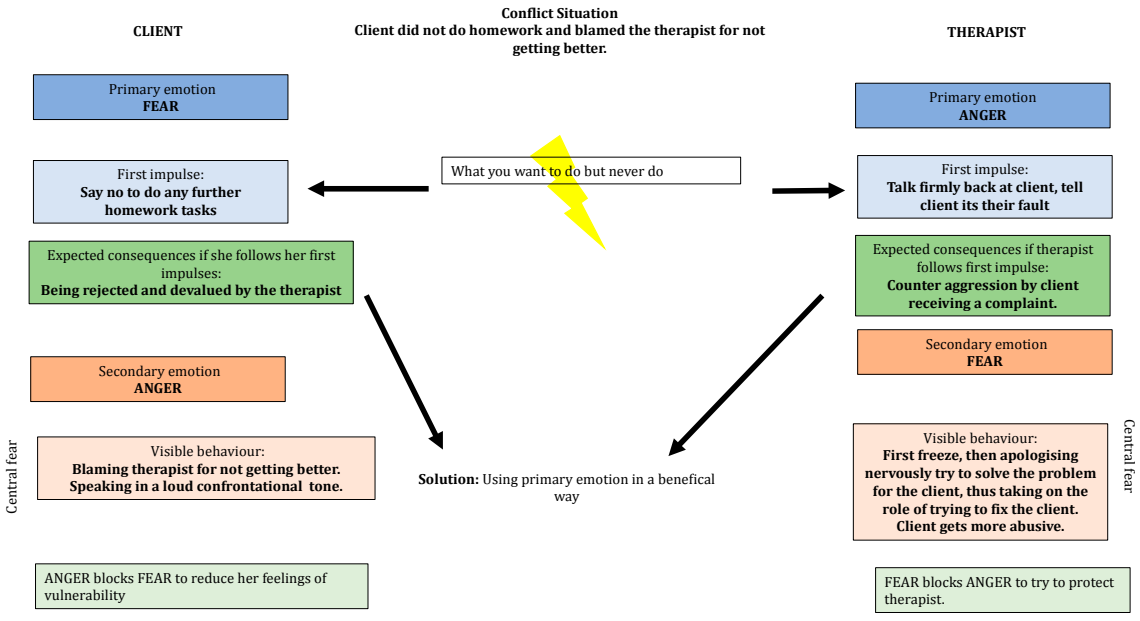

Figure 8. Interacting reaction chains resulting in escalation and problematic interaction

Figure 7. Interacting reaction chains, highlighting potential intervention points for change in the interaction.

As can be seen from Figure 7 the therapist has overlooked the fact that the client wants to be perfect in her role too and is showing the therapist anger because the client fears being imperfect and letting others down. The therapist is unware of the forbidden impulse of their own anger which is being blocked by fear. The therapist's fear left unregulated is impulsively expressed in the

interaction with the client as a kind of overly apologetic behavior in response to their client's anger. As the therapist succumbs to the unconscious processes of their own survival strategy the therapist tries to rescue the client by assuming full responsibility for the client's lack of homework completion.

This is a problematic outcome for both the therapist and the client. First the client has not learnt to regulate her anger, nor to get in touch with her fear of being imperfect. The therapist has inadvertently reinforced the client's need to be perfect by taking full responsibility for the client's failure in the homework task. The therapist missed the opportunity to get in touch with the anger impulses in their own body in response to the clients' criticisms.

What would an embodied therapist do in this situation?

Being aware of and feeling the anger inside of the therapist is an opportunity for the therapist to engage in a self-soothing task of breathing slowly and using their body and face to show a calm expression which could have also had the positive effect of down-regulating the client's anger too. Once the anger is down-regulated the therapist could have been in a position to reflect on the function of their felt anger for the interaction focus with their client instead of blocking their anger. The therapist can use the mobilizing energy of their regulated anger with the aid of their body to help the therapist to express their frustration with the client. For example, the therapist could show positive surprise to the client's lack of homework completion, leaning forwards towards the client in their chair with open arms and taking up a lot of space with their body to indicate power.

This would allow the client to feel some limits when expressing unregulated anger and feel some ownership over their fears of imperfection and still feel accepted by the therapist. The therapist then has an opportunity to check in with the client's central fears within the therapeutic relationship and ask the client to show what their body wants to do now, how their body is feeling in the current moment. This gives the therapist an opportunity to synchronize her whole body with the client's body expression of fear, giving the client a first type of emotional validation and acceptance of fear. The client has the opportunity to experience, that the central fear of rejection does not happen to them when they get in touch with their fear. Instead the client has an opportunity to feel bonded to and validated by the therapist. This in turn can benefit the client enormously in helping to break their survival strategy in their interaction with other significant people in their life outside of therapy. The stage is set for the client to use the positive therapeutic alliance to begin the process of accepting her imperfections in her work relationships and learn not to take on so much responsibility at work by setting limits and saying no.

Conclusion and future directions:

We have examined an integrated model of psychotherapy for use with clinical populations which we have coined ECBT: a marriage between the top down method of CBT and bottom up embodiment techniques. Embodiment techniques such as movement synchrony and imitation processes readily and easily compliment and extend the 'talking therapies' as well as addressing some of their limitations. The ECBT model would gain profit from further empirical studies evaluating its effectiveness with a wide range of clinical populations to fully assess its validity. Although some preliminary case studies and group analysis based on the ECBT method are promising, randomised controlled trials using the ECBT model would further determine its efficacy

595 and validity. The integration of the IS and ECBT model stands to be a promising avenue for further
596 research. This may be particularly pressing to begin to take standardized assessment measures of
597 interpersonal synchrony between the client and therapist (both unconscious and conscious
598 applications) such as movement synchrony, alliance and emotional regulation and to determine the
599 predictive effects of these variables on reducing client psychopathology.
600
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717 Hauke developed the conceptualization of ECBT frame and pointed to the IS model proposing to use it for the
718 aspect of therapeutic relationship in ECBT. Christina Lohr contributed to the participation in the development
719 of the concepts, established new criteria for an embodied therapist and revised the body of work.
720

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