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Embodiment in psychotherapy – A necessary complement to the canon of common factors?

Abstract

An ongoing debate in psychotherapy research is addressing whether nonspecific "common" factors, or specific factors (techniques), are to be considered as the essential ingredients of therapeutic change. This controversy is currently unresolved; the debates inadvertently showed that so far a third aspect of almost all psychotherapies was neglected in academic psychotherapy research – the role of the body and of nonverbal behavior in the session. The current taxonomy of core constructs of psychotherapy thus appears biased by not covering the embodiment of psychotherapy. In recent decades, embodiment has become an influential concept in psychology and cognitive sciences. It denotes an increasing awareness of the reciprocity of mind and body ("bi-directionality"), with the mind not only affecting the body but also vice versa. Embodied cognition comes to the fore in Theory of Mind, sensorimotor coupling, and nonverbal behavior. In addition, the embodiment of the mind constitutes a basis of social interaction and communication, as became evident in research on nonverbal synchrony, social contagion and mimicry. Thus, embodiment has a wide range of implications for psychotherapy. Psychomotor dysfunctions are often closely associated with affective and psychotic symptoms, leading to altered timing in the processing of stimuli and to disordered appraisals of the environment e.g. in psychosis. Problems of social exchange and social cognition may be viewed as disordered embodied communication, which opens up novel treatment strategies for psychotherapy and body-oriented interventions. But also in cognitive and psychodynamic psychotherapy, which are targeted not on the body but on mental and emotional processes, the nonverbal level tacitly plays an important role in establishing the therapeutic alliance and thereby promoting therapeutic outcome. In this article we therefore wish to discuss the importance of embodiment for psychotherapeutic interaction.

Keywords: Bidirectionality, embodied cognition, embodied communication, nonverbal synchrony, change mechanisms of psychotherapy

1. Specific, common and neglected factors of psychotherapeutic change

In the past 60 years, research has clearly demonstrated that psychotherapy is a substantially beneficial treatment for many forms of psychopathology. Depending on the kind of mental disorder, the effects sizes range between medium and very high. Regarding various psychotherapy approaches, mental disorders, and outcome variables, the mean effect size of psychotherapy amounts to 0.75. Up to 60% of the patients recover enduringly (Lambert 2013).

Whereas it is evident now that psychotherapy works, it is still neither exactly clear how it works nor is it precisely known what works in psychotherapy. To the contrary, there is considerable disagreement about the factors responsible for eliciting psychotherapeutic change. (Laska et al., 2014; Crits-Christoph et al., 2014). This discord mainly refers to the mixed results of comparative psychotherapy research: On one hand, comparisons of different psychotherapy approaches revealed only minor effect size differences. Meta-analyses showed an average effect-size difference of about 0.2 (Grissom 1996; Wampold et al. 1997, 2001; Luborsky et al. 2002). This finding has been labelled the "Dodo bird verdict" or "equivalence paradox" of psychotherapy research (Luborsky et al., 1975; Stiles et al., 1986). On the other hand, however, it has been repeatedly shown that some psychotherapy approaches are superior to others in the treatment of certain mental disorders and in the treatment of patients with certain interactional characteristics (Beutler et al., 2004; DeRubeis et al., 2005). These inconsistent findings of comparative psychotherapy research have led to two rivaling assumptions about the therapeutically active factors in psychotherapy: the specific ingredients assumption and the common factors model: "(...) researchers fall into two camps: Those how believe that treatment ingredients are the core of effective therapy and those who believe that common factors (...) are important" (Wampold & Budge, 2012, p. 602).

Proponents of specific therapeutic ingredients advocate for disorder-specific differential effects of distinct psychotherapy approaches (Chambless & Hollon, 1998; Chambless & Ollendick, 2001; Hofmann & Barlow, 2014). These are ascribed to the different techniques applied in different psychotherapy approaches. Thus, the specific ingredients assumption implies that psychotherapy works through treatment-specific and/or disorder-specific techniques. The term 'specific' refers to the theoretical specification of the technique in the context of a particular psychotherapeutic treatment model or the specificity of a technique for the treatment of a particular mental disorder. The specific ingredients assumption is the basis for demanding empirically supported therapies (EST) in the context of evidence-based practice. Commonly, the very influential treatment guidelines are derived from EST.

Supporters of the common factors model, however, defend the "Dodo bird verdict". They attribute the finding of small if any outcome differences to the operation of core therapeutic factors that are shared by all the different psychotherapy approaches. Common factors refer to factors of therapeutic change that are usually not explicitly theoretically anchored, neither in the treatment models of the different psychotherapy approaches nor in the change models of specific mental disorders.

The common factors concept has been introduced by Saul Rosenzweig (1936). He suggested that all methods of psychotherapy share some implicit factors. Based on Rosenzweig's postulate Jerome D. Frank developed his 'Common Component Model' in the 1960s (Frank, 1971). This model lists four therapeutic factors that are essential to all forms of therapy: 1) a socially authorized institutional context, 2) an emotionally supporting, trustful relationship between patient and therapist, 3) a plausible explanation ("myth") of the patient's problems, and 4) tasks and procedures ("rituals") derived from this explanation that can solve the patient's problems and foster changes in her or his attitudes and behavior. These factors help to overcome the patient's general sense of demoralization. This represents the hypothetic fundamental mechanism of therapeutic change.

Subsequently, a number of psychotherapy researchers have proposed additional common factors such as affective experiencing, cognitive mastery, and behavioral regulation (Karasu, 1986), therapeutic alliance, instillation of hope, problem confrontation, corrective emotional and mastery experiences (Weinberger, 1995), resource activation, clarification, and coping (Grawe, 1995), desensitization, affect regulation, mentalization, self-reflexivity or new narrative about the self (Jorgensen 2004; see Table 1). Other researchers suggested different classification systems of common factors: Omer and London (1989) assigned common factors to relationship factors, expectancy effects, reorganizing factors, and therapeutic impact. Grencavage and Norcross (1990) derived five categories of common factors: client characteristics, therapist qualities, change processes, treatment structure and therapeutic relationship. Lambert (2013a) suggested three classes of common factors: supportive factors, learning factors, and action factors, whereby "(...) supportive functions precede changes in beliefs and attitudes, which precede the therapist's attempts to encourage patient action" (Lambert 2013a, p. 173).

Table 1
Common factors and classes of common factors suggested by different psychotherapy researchers

Authors	Common factors
Karasu (1986)	**Affective experiencing:** Patient experiences and expresses feelings **Cognitive mastery:** Patient acquires and integrates new thinking patterns **Behavioural regulation:** Patient learns new behavioural responses
Weinberger (1995)	**Therapeutic working alliance:** Patient and therapist develop a trustful and collaborative relationship by pursuing shared goals and working on concerted problem-specific tasks **Instillation of hope:** Patient develops the expectation that therapy will succeed **Problem confrontation:** Patient is encouraged to face problems **Corrective emotional experience:** Consequences are not as bad as feared **Experience of cognitive mastery:** Patient learns new thinking patterns **Experience of self-efficacy:** Patient develops a sense of personal control
Grawe (1995)	**Resource activation:** Patient's strengths are emphasized **Problem confrontation:** Patient is encouraged to face problems **Insight:** Patient's awareness of problems is fostered **Coping:** Patient is helped to develop mastery through receiving coping skills
Jorgensen (2004)	**Katharsis:** Patient is offered opportunities for emotional relief **Desensitization:** Patient emotional reactions are weakened by exposure **Corrective emotional experience:** Consequences are not as bad as feared **Emotion regulation:** Patient learns to influence emotional reactions **Experience of self efficacy:** Patient develops a sense of personal control **New narrative about self:** Patient develops new sense of being in the world
	Classes of common factors
Omer & London (1989)	**Relationship factors** **Reorganising factors** - Dismantling dysfunctional patterns - Providing new perspectives and concepts - Support to confront problems differently
Grencavage & Norcross (1990)	**Patient characteristics** (e.g. positive therapy expectancies) **Therapist qualities** (e.g. empathic understanding) **Relationship elements** (e.g. trust, collaboration) **Change processes** (e.g. corrective emotional experiences)
Lambert & Ogles (2013)	**Supportive factors** (e.g. positive relationship) **Learning factors** (e.g. self-efficacy expectation) **Action factors** (e.g. training and practice of skills)

Much of the debate about what leads to change in psychotherapy has centered on the therapeutic significance of specific versus common factors. This controversy "(…) has pervaded several decades and is still the guiding influence that directs the reflections in the field about factors responsible for change" (Castonguay & Beutler, 2006, p. 632). Specific and common factors such as the therapeutic relationship "(…) have been seen as separate and typically pitted against one another, fostering the idea that it is either techniques or the relationship that is most responsible for change" (Goldfried & Davila, 2005, p.421). However, conceptual considerations as well as the findings of process-outcome research rather indicate an interplay between specific techniques ***and*** common factors.

Specific techniques and common factors refer to different aspects or levels of the psychotherapy process: According to the "Generic Model of Psychotherapy" by Orlinsky et al. (2004), common factors can relate to aspects of the therapeutic bond (e.g. therapeutic alliance), to intrapersonal aspects of the patient (e.g. expectancies for improvement, readiness to change), and to clinical aspects, i.e. to so-called in-session impacts or therapeutic realizations. The latter would be true for common factors such as corrective emotional experiences, clarification, and coping. Techniques, however, refer to the technical aspect of the psychotherapeutic process. Consequently, common factors and specific factors simply address quite different aspects and levels of the Generic Model. The reference to different process levels implies that common factors cannot compete directly with specific factors. Rather than running in a horse race against each other, the 'Generic Model of Psychotherapy' suggests a synergistic view of common factors ***and*** specific techniques.

Common factors related to the clinical aspect of the psychotherapeutic process have been denoted as "common principles of therapeutic change" (Goldfried, 1980; Castonguay & Beutler, 2006). They represent therapeutic strategies of the therapist, whereas techniques conform with the tactics that are used to implement these strategies (McAleavey & Gastonguay, 2015). Thus, the application of techniques is an important vehicle to mobilize common factors.

The technique-relatedness is also inherent in the common factor 'therapeutic alliance'. According to Bordin (1979), the therapeutic alliance is determined by problem-specific tasks and goals (Strauß, 2001). Therefore: "The techniques used by the therapist (…) influence the kind of alliance that unfolds" (Goldfried & Davila, 2005, p. 424). In a review of techniques that affect the therapeutic alliance, Ackerman and Hilsenroth (2003) found that exploration and reflection of the patient's point of view by the therapist, as well accurate interpretations and facilitation of affect expressions, positively contribute to the therapeutic alliance.

Conversely, the application of techniques is inevitably embedded in the common factor 'therapeutic alliance', which has been found to contribute strongly to the success of tech-

niques (Goldfried & Davila, 2005). Furthermore, the effects of techniques are mediated by common factors related to the expectancies and motivation of patients (e.g., patient's expectation that therapy will help, patient's readiness to change, patient's engagement). Thus "the complexity (…) of psychotherapeutic processes cannot be reduced to a set of disembodied techniques because techniques gain their meaning and, in turn, their effectiveness from the particular interaction of the individuals involved. (…) In this sense, the procedures (techniques) and interpersonal factors are thoroughly intertwined and cannot be separated"(Butler & Strupp, 1986, p. 33).

In addition, the findings of process-outcome studies indicate that both common factors as well as treatment techniques are positively related to the outcome of psychotherapy. A series of meta-analyses demonstrated that several aspects of the common factor therapeutic alliance, such as empathy and goal consensus, are clearly connected with positive outcome (Norcross & Wampold, 2011). Likewise, specific techniques such as exposure, empty-chair- or two-chairs-techniques, paradoxical intention and some kind of interpretations "(…) have found to be consistently and strongly associated with positive therapeutic outcome" (Orlinsky et al., 2004, S. 341). Thus, the question is not whether techniques ***or*** common factors produce change, but how they interactively contribute to psychotherapeutic change processes for different types of clinical problems of patients with different relational characteristics (Goldfried & Davila, 2005). The Taxonomy Project of our research group (Tschacher, Junghan & Pfammatter, 2014) constitutes one of the first attempts to empirically arrive at a better understanding of the interactions between common factors and specific techniques. The Taxonomy Project aimed at contributing to a clearer definition and conception of common factors by relating them to specific techniques. In a web-based survey, psychotherapy experts rated the degree of the associations between the most prevalent common factors discussed in the canonical literature and standard techniques of the four main psychotherapy approaches (cognitive-behavioral, psychodynamic, humanistic, and systemic therapy). The survey included a definition of each common factor and technique. Experts were then instructed to assess how strongly the single techniques are associated to each of the common factors. A mixed-effects hierarchical analysis was performed to analyze the associations between common factors and techniques. The common factors were defined as the dependent (criterion) variables, techniques, allegiance, profession, experience, age, and gender were determined as fixed effects, and the expert was entered into the model as a random effect.

The findings indicate that each of the common factors was either positively or negatively associated with a specific set of techniques. The common factor therapeutic alliance, for instance, was positively associated with techniques such as verbalization of emotional reactions, positive reinforcement, and focusing. However, biofeedback training, the reflecting team technique, and progressive muscle relaxation were negatively related to the therapeutic alliance. The common factor problem confrontation was positively connected with exposure and response prevention,

the role play technique, the empty-chair and two-chair technique, and focusing. In contrast, progressive muscle relaxation, biofeedback training, therapeutic abstinence and positive reinforcement techniques were negatively associated to this common factor. Overall, cognitive-behavioral and humanistic techniques were frequently associated positively with common factors, whereas psychodynamic, systemic, and body-oriented techniques were predominantly related negatively to common factors.

The findings of the Taxonomy Project supported the premise that common factors and techniques are associated. Moreover, common factors seem to be characterized by individual patterns of positive and negative relations to a set of techniques. However, the survey also demonstrated that the selection of common factors, which representatively depicts the current literature, might be biased. Psychodynamic, systemic, and body-oriented techniques were predominantly negatively associated with common factors. It seems that certain techniques (including clearly evidence-based techniques such as muscle relaxation, biofeedback training, and hypnosis) are not well represented by the presently discussed "canonical" common factors. Especially concerning the body-oriented techniques, this may reflect a general neglect of embodiment processes in contemporary psychotherapy research.

2. Embodied cognition

In recent decades, embodiment has become a frequently cited construct in psychology and cognitive sciences. Researchers and practitioners use this construct to denote the conceptual position that mental processes (cognition, thinking, emotion, the psychological self) should be viewed in the context of the moving body. By this they depart from the computer metaphor of mind – the embodiment stance instead posits that abstract information processing is not the essence of cognition. Accordingly, the mind cannot be fully understood without considering its embedding, the body. This has far-reaching implications for psychological research as well as for practical applications such as psychotherapy, as will be elaborated in the next section.
The conventional view (including folk psychology) would emphasize that environmental stimuli entail mental (cognitive and perceptual) responses in a perceiver, which may result in emotions and bodily behavior (mind 1 body). Embodiment complements this view by acknowledging the less evident, but equally important, reverse sequence – motor action and body postures may have an impact on the mind, often at an unattended and tacit level (body 1 mind). Both sequences together comprise the bi-directionality of embodiment, and it is especially the James-Langean body 1 mind-processes that are the focus of embodiment research. It is important to rule out a potential misunderstanding in this context of bodily impacts on the psyche. The embodiment approach does not imply that mental processes are identical to physical-material processes in the sense that psychology could or should be reduced to physics or neurobiology. The question of how the mind is continuously influenced by the body cannot be

answered by claiming that mind is "nothing but" body. In other words, the eliminative position ("the mind is reducible to bodily processes") is not shared by the proponents of the embodiment approach – addressing embodiment is only meaningful on the premise of two distinguishable domains psyche and body. This differentiating position is consistent with the philosophy of phenomenology, which views the human condition under the dual aspect of Leib and body (Merleau-Ponty, 1945). Leib means the experienced and lived body that must be distinguished from the physical body, the object of natural science exploration. The dual aspects of phenomenology are likewise not compatible with the idea that mind and the psychological self, embodied as Leib, can be reduced to neurobiological processes.

The embodiment approach thus targets the interaction and bi-directionality of bodily and mental action: body 1 mind. Many aspects of this approach attracted attention in recent empirical research, so that by now a large body of evidence has been accumulated. Especially social psychological studies of the last two decades have demonstrated that experimental manipulations of bodily variables (such as gesturing, posture, facial expression) crucially influence affects, emotions, attitudes and cognitive appraisals. To give an example, a study of Michalak and colleagues (2015) addressed participants walking on a treadmill. Using biofeedback, participants were gradually shaped, without their knowing, to walk in either a "depressed" or "joyful" manner. Depressed gait, for instance, is characterized by lower amplitudes of vertical movements and a tendency of the upper body to lean forward (Fig. 1). The changed gait style was not recognized by participants and thus conscious cognitive processes did not influence the memory task that was finally performed after the gait feedback: participants were presented with words of positive and negative affective states. The participants in the depressed gait group showed a significant tendency to recall the negative items better than the happy walkers. This pointed towards a bodily induced memory bias as is commonly found in the cognitive psychopathology of clinical depression.

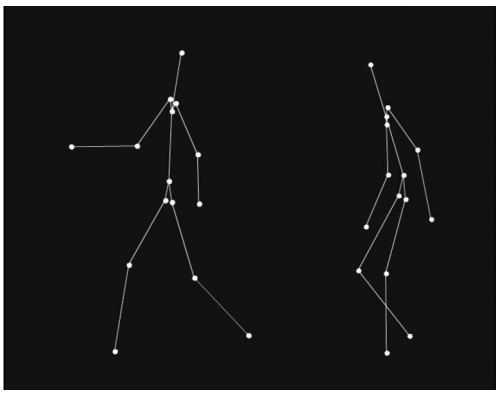

Fig. 1: Illustration of a happy (left) and sad (right) walker. Shown are point-light displays (points connected by lines for better visibility in this static depiction). Adapted from the demos of www.biomotionlab.ca (Troje, 2002)

A qualitative example is given by philosophical analyses of mathematical thinking (Núñez, 2008). Based on these studies, creativity is less a matter of purely abstract reasoning and cognition, but rather enacted through bodily metaphors by the use of tools such as paper, pencil, gestures – as was also claimed in an interview with the Nobel prize winner and physicist Richard Feynman. Even seemingly pure abstract concepts in mathematics apparently rely on an embodied grounding.

The embodiment perspective in psychology has altered our conceptualizations of memory. The conventional approach, which is consistent with the computer metaphor, has assumed an internal knowledge base that can be addressed and browsed by the mind in memory searches. Memory is understood as a large store (the storehouse metaphor of the mind: Dennett & Kinsbourne, 1992) into which items can be uploaded as memory traces. These items can later be retrieved in the search, and what is found is in principle the same information that was stored at the same address before. In contemporary views, however, this is no longer a feasible model of the functioning of memory. Current psychology rather emphasizes a synthetic principle of retrieval. The act of remembering is a process of active pattern formation, akin to a self-organized reconstruction of the remembered materials in associative memory models (Haken, 1987). Memories are therefore less like traces, but rather the creative and concise reorganizations of previously "stored" information. Additionally, this storage is frequently not "inside" but in the person's environment, in the interaction with other persons and external objects (external memory).

In short, one may observe that according to the various lines of research, psychology has eventually left its long-standing cognitivistic phase. It is increasingly acknowledged that the mind may be understood as embedded in its body, and as situated in its environment; this novel approach provides a more realistic theory of mental processes.

3. Embodied communication

What is true for the cognition of individuals must have implications for social interactions between individuals. It was consequently found that embodiment shapes social cognition and the way people communicate as well. When we observe another person, we automatically employ capacities of perspective taking, sometimes termed Theory of Mind (ToM) or mentalizing, that enable us to perceive the world almost "through the other's eyes". Empathy and compassion (the German word Mitgefühl expresses this social aspect of Gefühl, feeling) rely on perspective taking. Empathy may go as far as subjectively experiencing the pain that was inflicted on somebody else. The pain inflicted on person A may make observer B cringe and experience A's sensations. The neural correlate of such phenomena was proposed to rest on

a mirror neuron system in the brain – neurons in B's motor cortex are not only able to enact B's behavior but also to respond to analogous behavior observed in A (Rizzolatti & Craighero, 2004). The potential to transfer sensory-motor experiences to other individuals and even to inanimate objects (c.f. the rubber hand illusion) can modulate a person's perceived authorship and self-other boundaries (Paladino et al., 2010). It is the prerequisite for social interaction and social cognition, but also for functional action in tool use, or in virtual-reality environments.

Perspective-taking and mirroring may be studied empirically in their many different guises, as social contagion, mimicry, or synchrony. Especially emotional utterances can become socially "contagious" und may thus entail synchronized behavior. Some socially expressed emotions are readily adopted and repeated by others. Such resonance phenomena are well-known in contagious yawning and laughing (instrumentalized, e.g., by the "laugh-line" of TV sitcoms) or of giving applause in audiences.

Just as cognition is more than just the processing of abstract information, communication is not just the sending and receiving of bit-wise information parcels, but is additionally characterized by nonverbal and bodily interaction. Communication is at any point in time bidirectional (Storch & Tschacher, 2016), i.e. we send and receive synchronously. The embodied nature and the bidirectionality of communicative acts cast doubt on the utility of the sender-receiver model of communication (Shannon & Weaver, 1949). One may label the alternative model that extends the traditional idea of communication as sending and receiving informational messages: embodied communication. Embodied communication emphasizes that in social interactions a novel system emerges that not only comprises but supervenes its elements, the interactants and their messages. The signature of this new system is synchrony.

Various researchers in developmental, social and clinical psychology have found empirical evidence for nonverbal synchrony and resonance in interacting dyads (Bernieri, Reznick, & Rosenthal, 1988; Chartrand & Bargh, 1999; Ramseyer & Tschacher, 2011). These findings generally supported the approach of embodied communication using different measures. Our own group has used video-based algorithms to monitor movement activity displayed in videos (Ramseyer & Tschacher, 2014) as well as direct assessments of movement and peripheral physiology using accelerometric sensors and electrodes (Tschacher & Brunner, 1995). The video analysis approach can make use of counts of pixel changes in the digital video streams – the temporal evolution of pixel changes provides an approximation of the interactants' body movements (Fig. 2). At a next step, motion energy analysis (MEA, Ramseyer & Tschacher, 2011) is convenient for the computation of nonverbal synchrony based on the cross-correlations of the movement time series of two interactants. The aggregated cross-correlations may then, in a third step, be compared to surrogate time series to detect whether cross-correlations are significant (Tschacher, 1997; Ramseyer & Tschacher, 2010).

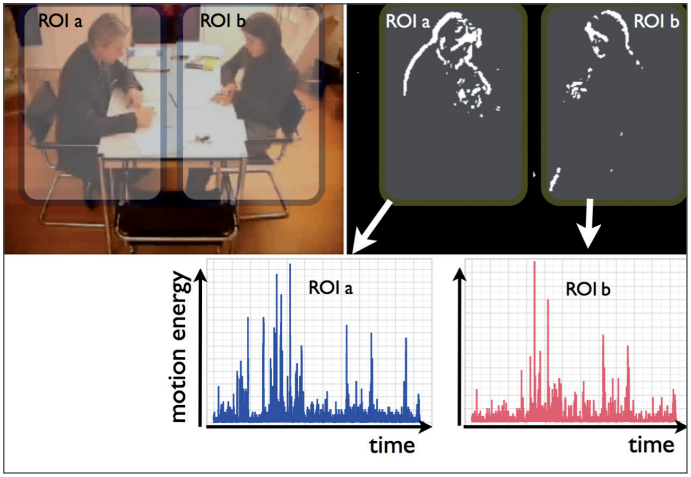

Fig. 2: Illustration of MEA (Motion Energy Analysis). Top left, person a und person b with their regions of interest (ROIs). We quantify how many pixels are changed due to persons' movement from one video frame to the next (top right: display of changed pixels as white dots). The number of pixel changes by ROI is continuously monitored as a time series (bottom: time series of persons a and b)

In a series of projects we showed that psychotherapy dyads were significantly synchronized in their nonverbal behavior during therapy sessions (Cohen's d effect size against surrogates: 0.54). The extent of synchrony computed in randomly selected 15-minute slices of single sessions predicted therapy outcome at the end of the complete course of therapy and the quality of the therapeutic alliance. Synchrony was also meaningfully correlated with patients' interactional problems, self-efficacy, and attachment styles (Ramseyer & Tschacher, 2011). Therapeutic dyads with higher synchronies were the ones that had increased patients' self-efficacy as an outcome. Insecure attachment patterns of patients, distress due to interpersonal problems and higher levels of psychopathology were all correlated with lower synchrony during sessions.

In a non-clinical setting, people engaged in prescribed conversations (Tschacher, Rees & Ramseyer, 2014) also developed nonverbal synchrony with effect sizes ranging between 0.56 and 1.11, depending on the content of the conversation task. As in the psychotherapy study, synchrony was measured unobtrusively, i.e. outside of participants' awareness. In the conversation study, the more synchronized participants showed higher positive and lower negative affectivity after the conversations. In a recent study, we replicated the nonverbal synchrony findings and the association of synchrony with alliance quality using accelerometric methods in an extended single-case design (Ramseyer & Tschacher, 2016).

4. Discussion – Implications of embodiment

We have argued that the embodiment of cognition and communication is obviously relevant for psychotherapy. The empirical finding that therapists and patients become synchronized nonverbally points to this conclusion. The empirical association of nonverbal synchrony with some common factors – quality of the alliance, self-efficacy of the patient – signals that there are important implications of bodily variables for variables of psychotherapy process. This is true for therapy modalities that are not expressly "body psychotherapies".

At the same time, few of these implications are acknowledged by psychotherapy research. The Handbook of Psychotherapy and Behavior Change (Lambert, 2013b) mentions neither bodily variables nor nonverbal behavior. We consider this lack of attention symptomatic for the canon of psychotherapy – in the wake of the cognitive turn both the behavioral and the psychodynamic traditions of psychotherapy have largely exorcized the body from their research agendas. This is true even when considering single body-oriented founding figures in psychoanalysis (such as Wilhelm Reich) and the origins of cognitive-behavioral therapy (CBT) in body-based behavior therapy. Exceptions to the disembodied development of psychotherapy have been less influential academically, such as the humanistic psychotherapy tradition, proponents of integrative therapy (Petzold, 1996) and dialogical systemic therapy (Seikkula & Arnkil, 2006).

We observe, however, that the present state of disembodied psychotherapy is rapidly changing. We wish to argue in favor of such changes in the following by mentioning three lines of research and theorizing: First, CBT is currently developing by integrating humanistic ideas by its so-called third wave; second, research in psychopathology is increasingly addressing psychomotor deficits; third, the common-factor approach in psychotherapy research will ultimately enlarge the scope of active ingredients of psychotherapy and emphasize embodied change mechanisms.

The third-wave approach in CBT (Hayes, Follette, & Linehan, 2004) has integrated concepts and techniques from humanistic psychotherapy and from the Buddhist culture, notably mindfulness (Bergomi, Tschacher, & Kupper, 2013). The mindfulness concept has first been integrated into CBT in the 1990s by Marsha Linehan's dialectical behavior therapy, and has since set off a large number of therapeutic applications. Mindfulness focuses already on the body by techniques such as the "body scan", and by stressing awareness of bodily and sensory experiences without cognitively evaluating such perceptions. This shows that third-wave CBT clearly departs from a cognitivistic understanding of mental processes. One may say that mindfulness-based cognitive psychotherapy is a definite steps towards an integration of embodied cognition and embodied communication, but it does not fully elaborate embodiment in therapy. What is still largely missing is the integration of ***movement*** in therapy.

Research in psychopathology has increasingly focused on the contribution of the moving body in several disorders. In schizophrenia studies, a frequent finding is patients' problems with social cognition. The ToM deficiencies in schizophrenia have been recently placed in a novel context by showing that there is a more encompassing, not only a cognitive, deficit of disembodiment (Fuchs & Schlimme, 2009). Patients move differently depending on the constellation of their symptoms, as was found in monitorings using actigraphy (Walther et al., 2014). Such motor abnormalities are especially obstructive in social communications. In dyadic exchanges, patients synchronize less with their interactants (Kupper et al., 2015), and they also receive attenuated bodily responses from healthy persons. This is associated not only with negative symptoms but also with what is commonly termed cognitive disorganization of psychosis. First attempts to develop body-based psychotherapy for schizophrenia that specifically targets these problems have been promising (Röhricht & Priebe, 2006; Martin et al., 2016). In a similar manner, depressive disorders may be viewed from this angle. Depression likewise seems to be characterized by a disintegration of embodied processes (Michalak et al., 2014; Irarràzaval, 2015).

The common-factor approach in psychotherapy has been reviewed in the first section. A recent survey has shown which techniques connect in which way to the current canon of acknowledged common factors (Tschacher et al., 2014). The present taxonomy suffers from a marked shortcoming in that body-based techniques are not well represented in it. This lack of concepts at the level of common factors of psychotherapeutic change may however be remedied in a future common-factor framework. The prevailing set of common factors should be complemented in order to map all therapeutically effective techniques. An important candidate for such a complement of the list of common factors seems to be "embodiment". Processes of embodiment are involved, as was shown above, in psychopathology and psychotherapy in many different ways.

Additional to current psychotherapy research, a large corpus of therapeutic knowledge already exists outside the main-stream journals. Dance and Movement therapy is likely a source of novel intervention techniques that are definitely under-researched (Tschacher, Munt, & Storch, 2014 a,b). The use of systems constellations in family therapy provides paradigmatic techniques because they implement the movements, postures, and overt behaviors of clients right in the therapy setting. In sum, the evaluation of potent but neglected sources of embodied therapy interventions will eventually connect to a common factor "embodiment", and in this endeavor current psychotherapy research should join forces with Gestalt therapy, psychodrama, dance and movement therapy, and systemic therapies.

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