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# Embodiment, enactment, and the lived body in foreign language learning: a novel conception of action-oriented language education

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In educational settings, theory and practice of foreign language (FL) learning have been dominated by a cognitive output-driven notion of an ostensibly quantifiable "efficiency" of FL learning. The concepts of enactment and embodiment challenge the conventional view of language learning by positing that the learner's organism endows components of the environment with specific meaningfulness, and the environment provides the organism with specific affordances, activating modality-specific brain areas. Hence, cognitive learning processes can no longer be understood as linear input-output functions for accumulating information in the brain but must involve the sensory and motor capacities of learners' bodies. Action-oriented foreign language learning scenarios mobilize preverbal (inter)corporeal experiences, which are actually lived through in multisensorial and multimodal experiences. Whereas methodologies promoting bodily activation emphasize learners becoming more attuned to the foreign language-framed eco-social environment and its semiotic resources, they tend to overlook the aspect of the learner's immaterial lived body and its pre-reflective resonances with and responses to actually experiencing the FL and its manifestations which is vital for connecting subjective corporeal memories to the FL learning process. What was corporeally sensed as striking resonances can be made explicit through attentiveness and reflective verbal explication. Conversely, learned items appear to be more meaningful to the learner when the situated affective background shines through. Since language is a form of embodied sociality, the objective for FL learners is to incorporate the foreign language as an integrated semiotic repertoire for sociocultural behavior through body mobilization and enhanced attentiveness to the preverbal resonances and responses of their lived body.

## KEYWORDS

enaction, foreign language learning, intercorporeality, language embodiment, lived body, translanguaging, transpositioning

## 1 Introduction

The potential of the lived body for foreign language (FL) pedagogy has not yet been systematically considered because formal education is seen as a predominantly brain-centered endeavor ([Doughty and Long, 2003](#)). The largely disembodied understanding of cognition in conventional FL pedagogy conceptualizes learning as the processing,

structuring, and representation of discrete information in a subjective cognitive space, resulting in a change of the individual's cognitive state (e.g., [Long, 2015](#)). Representational theory implies a mental realm in which representations and simulations, including grammatical rules, operate prior to communicative acts. The assumption is that, once the learner has learned an FL word or rule, they have stored it in their brain and subsequently can do something with it ([Larsen-Freeman, 2010](#), pp. 52–53). As a result, the cognitive approach has turned the FL classroom into a place of detached learning where sensuality, emotion, and (inter)corporeality are not valued ([Hayakawa et al., 2016](#)) because they are seen as a distraction from 'efficient' cognitive engagement with the FL in a systematic manner. The emphasis on producing linguistically 'correct' structures and utterances, which has resulted in an increasing commodification or 'McDonaldization' ([Ritzer, 2004](#)) of FL education, echoes neoliberal ideas of an output-driven, supposedly quantifiable 'efficiency' of FL teaching and learning efforts. It is facilitated by a presumed 'measurability' of the learning process through a supposedly reliable testability of predefined 'objective' learning outcomes for all learners. The cognitive approach to FL learning presumes that brain activities dominate all other potential influences on the FL learning process to an extent that "research on SLA is increasingly viewed as a branch of cognitive science" ([Doughty and Long, 2003](#), p. 4).

Communicative and intercultural approaches to FL learning introduced social and cultural elements to the FL classroom, recognizing that "doing things" with L1 and FL words ([Austin, 1962](#)) has an impact on learners' ongoing and dynamic notions of self. Communication, therefore, is always "socially embedded and culturally embodied" ([Pennycook, 2010](#), p. 63). Whereas the acquisition of communicative and intercultural competences was defined as the objective of FL learning, embodiment as such was not explicitly considered. Rather, [Vygotsky's \(1986\)](#) notion of internalization of learned items was favored, referring to the aspect of cognitive learning as processing and storing information in the brain. Communicative and intercultural FL methodologies integrated to a certain extent performative means such as role play or cultural simulation games ([Jones, 1982](#)), involving non-verbal semiotic means, such as gesture, mimicry, body language, etc., as an additional basis of interactive expression and comprehension ([Crutchfield and Schewe, 2017](#)). However, these approaches to FL learning are supportive of a functional view of FL learning, reducing language to a medium of communication in a seemingly objective world which is the same for all people. With this conception, it ignores the ontogenetic (world-constituting and personality-shaping) dimension of language which is emergent from the affective, perceptive, experiential, and signifying qualities of the individual learner's lived body in attunement with affordances of the ecological environment. Every human language evokes its own atmospheres and corporeal resonances, affecting people in a specific manner. Languages thus cannot be seen just as the sum of its symbols and constellations, available as the raw material for worldwide communication, since every speaker of a language is *per se* also an affective speaker whose incorporated language(s) are a part of their personality.

In recent years, alternative body-involving approaches to FL learning have shifted the focus of analysis away from

cognition, acknowledging the embodied basis for language processing and emphasizing the relevance of body mobilization in intercultural, communicative, and context-rich environments. Such alternative approaches include, among others, sociocultural theory ([Lantolf, 2000](#)), conversation analysis ([Kasper and Wagner, 2011](#); [Mondada, 2019](#)), complexity theory ([Larsen-Freeman, 2010](#)), the identity-related approach ([Norton and McKinney, 2011](#)), and the sociocognitive approach ([Atkinson, 2011, 2014](#)). These approaches, while deploying their own theoretical framework, share a skepticism toward notions of essentialized constructs and stable dichotomies in favor of discursive processes that are situated, hybrid, and emergent. These alternative approaches place the active embodied engagement with ecological affordances at the heart of their endeavors, but they do not consider in any detail the quality of the subjectively lived and felt experience of embodied selfhood because they are interested in the dynamics of constituting subjective experience, rather than in features of the phenomenal field of consciousness. However, language is subjectively lived by its speakers in a culturally patterned and socially structured life-world so that every speaker is corporeally affected by its specific texture, rhythm, sound, pattern, and social impact. Plurilingualism therefore cannot be restricted to the instrumental aspect of the objective world but it must embrace the preconscious corporeal-affective dimension, with the language user resonating with speaking, hearing, and sensing the language.

In this article, it will be argued that regular and structured training in directing attentiveness to the unmediated resonances and responses of the lived body to actively experiencing the foreign language and its cultural context provides an important means for accessing highly subjective pre-reflective orientations towards foreign languages and cultures. The objective of this sort of training is the heightened attentiveness to feeling the personal affectation with the linguistic and cultural encounter of striking phenomena in experiencing the cultural other, e.g., in sensing that the contact with them feels different, more intensive, enthralling and risky compared to the incorporated first language (L1), thus tapping into the pre-reflective experience of the other. In direct interaction with others, the FL learner deploys their "full linguistic repertoire without regard for watchful adherence to the socially and politically defined boundaries of named (and usually national and state) languages" ([Otheguy et al., 2015](#), p. 283), including their para- and extralinguistic semiotic repertoires (e.g., tone, intonation, gesture, posture, etc.). With this conception, the theory of tanslanguaging challenges the conventional understanding of bi- or plurilingualism as the product of an *additive* process of language learning, and it emphasizes the category-transcending and emergent quality of language use, thus aligning with the notions of enactment, embodiment, multimodality, multisensoriality, and 4E cognition ([Newen et al., 2018](#)). However, these emerging tendencies in intercultural interaction research have not yet filtered through to FL teaching and learning practices, particularly regarding the complex impact of the learner's lived body on FL learning ([Witte, 2023](#)).<sup>1</sup>

<sup>1</sup> At issue here are subjectively sensed resonances, not observable objective facts, and they have not yet been considered for FL teaching and learning methodologies. A notable exception is [Müller-Pelzer \(2024\)](#) who

## 2 Neuroscientific research on sensorimotor processing

Neuroscientific research has shown that performing a mental task activates brain regions related to sensorimotor processes, thereby suggesting that language use is embodied. For instance, even when verbal phrases denoting *reported* action are processed by the recipient, neuronal sensorimotor activation (by so-called mirror neurons) occurs in a very similar manner as if one were actually *performing* the reported action (Dudschig et al., 2014, p. 14). Evidence provided by Harris et al. (2003) demonstrated that taboo and negatively loaded words elicited higher levels of skin conductance (e.g., blushing) in their first language relative to their FL, suggesting that the levels of embodiment most likely differ between the incorporated L1 and the FL, with less rich or direct connections made to the motor cortex for the FL (Perani and Abutalebi, 2005). These findings suggest that language comprehension is crucially based on action-perception circuits between the body and the brain (Gallese, 2008), involving not abstract and amodal representations, but rather “the activation of traces of perceptual and motor experience” (Zwaan and Taylor, 2006, p. 9). Hence, language comprehension is grounded in the body’s sensorimotor systems and in bodily experience which are stronger cues in naturalistic L1 acquisition than in mainstream FL learning, because the latter is reliant much more on the frequency of systematic linguistic and conceptual input (Xue et al., 2024). Even though neurophysiological research often takes a narrow cerebrocentric perspective and is fundamentally lacking the systematic integration of a conception of the living (and lived) human body and its immersion in the social, cultural, and linguistic fabric of the community orientating the lived body, it was clearly able to show that certain regions in the brain are involved in the shaping of corporeal intention<sup>2</sup> and bodily activity, including languaging activity.

The human organism is situated in specific material and social (or in short: ecological) environments, and it has a natural capacity to select and respond to their affordances and readjust in processes of attunement (or alignment) with these. An ecological affordance is not just ‘out there’ in the material or social world, but it is constituted when perceived by the subject, enabled by their sensorimotor capacities in conjunction with corporeal memory and in alignment with their situated intentions and protentions (in Husserl’s sense). Hence, affordances are neither physical nor social properties, nor subjective mental projections,

proposed a semester abroad for European third level students (“MONTAIGNE programme”) where the students grow into the FL and focus on sensing their corporeal affectedness with engaging in the European foreign language and culture *in situ*, guided by a pedagogical team, but without any external pressures in the form of institutional assessments or examinations. This proposal is certainly commendable from a phenomenological perspective but it raises questions about its viability in a generally outcome-oriented, neoliberal societal environment, particularly due to its duration of a whole semester.

<sup>2</sup> The term “corporeal” in this article refers to the aspect of the immaterial lived body.

but they have a dual borderline aspect, as Gibson suggested: “[A]n affordance is neither an objective property nor a subjective property; [...] it is both if you like” (Gibson, 1979, p. 129). Affordances are, as Chemero (2003) argued, “the glue that holds the animal and environment together” (p. 190) in terms of mind-independent relational phenomena. Hence, cognition is emergent from continual preconscious interaction between sensorimotor and neural signals, corporeal intentionality, and perceived situated ecological affordances in combination with corporeal memory, activated by the moving body in response to ecological stimuli. The individual does not deliberately choose which affordance they will respond to, but the lived body enters a responsive relationship with a perceived affordance at a pre-reflective level.

## 3 Enaction and embodied cognition

The concept of enaction posits that the living organism is to be understood as an autopoietic system that requires continual interaction with environmental affordances for its preservation and reproduction. In the course of the sensorimotor interactions and alignments with environmental affordances, the living human organism enacts its world. The organism and the environment engage in a process of reciprocal “mutual shaping” (Di Paolo et al., 2018, p. 88), through which cognitive structures *emerge* from enaction in terms of “the recurrent sensorimotor patterns that enable action to be perceptually guided” (Varela et al., 2016, p. 173). Thus, embodied cognition is a temporal, momentary aspect of living and continually evolving agents in biological, but also in intercorporeal and intersubjective dimensions (Di Paolo et al., 2017, p. 5). The latter aspect refers to the fact that we are intersubjective and linguistic agents (Di Paolo et al., 2018), shaping our identities (understood not as organic entities but as flows of sensibilities) and our world through activities of participatory sense-making with others in the world (De Jaegher and Di Paolo, 2007) by means of underlying preconscious processes of reciprocal bodily attunement, intercorporeal affectivity, and mutual incorporation.

The aspect of preconsciously shaping emergent intercorporeal behavior (in terms of, e.g., affiliative alignment of posture, body movement, body orientation, gaze) fosters emotional and kinesthetic empathy between the interactants (Atkinson, 2014), which can give rise to processes of mutual incorporation. According to Fuchs and De Jaegher (2009), mutual incorporation refers to “the reciprocal interaction of two agents in which each lived body reaches out to embody the other, [which] implies *coordination with*” (p. 474; emphasis in original) the other lived body, rather than unilaterally reaching out to it. The concept of mutual incorporation emphasizes the way the overlapping and intertwining of ‘the interactors’ operative intentionalities” (p. 477) can evolve in the context of intercorporeal coordination and mutual interaffectivity. It can sediment in intercorporeal memories of two or more individuals to form overarching “procedural fields of possibility” (Fuchs, 2017b, p. 328) and collective agency, which can be reactualized and thereby suggest certain types of coordinated behavior in subsequent interactions.

## 4 The dual aspect of face-to-face interaction

In direct face-to-face communication, there are, broadly speaking, two different aspects of interaction at work which are intricately entwined: (1) the explicit form of inter-subjectivity which is located at the level of the interactants intentionally relating to each other by semiotic means, in particular language, and (2) the primordial level of preconscious inter-corporeality between the lived bodies of the interactants. The notion of inter-corporeality refers to the “prereflective intertwining of lived and living bodies, in which my own is affected by the other’s body as much as his by mine, leading to an embodied communication” (Fuchs, 2017a, p. 9), for instance, by unwittingly giving off signs at a bodily level, which the other lived bodies pre-reflectively resonate with and respond to. Both levels of interaction are closely entwined, as Maturana suggested: “Interactions in language do not take place in a domain of abstractions; on the contrary, they take place in the concreteness of the bodyhoods of the participants” (Maturana, 1988, p. 19). Face-to-face interaction cannot operate in a purely instrumental sense; it is simultaneously constituted in a mutually interaffective, intercorporeal sense at both conscious and preconscious planes.

The intercorporeal level of intersubjective face-to-face interaction can generate its own dynamics, thus taking the initiative away from subjective intentionality, because: “The coordination of their [interactants’] body movements, utterances, gestures, gazes, etc. can gain such momentum that it overrides the individual intentions, and common sense-making emerges [...]. *The ‘in-between’ becomes the source of the operative intentionality of both partners.* Each of them behaves and experiences differently from how they would do outside of the process, and meaning is co-created in a way not necessarily attributable to either of them.” (Fuchs and De Jaegher, 2009, p. 476; emphasis in original).

The form of meaning arising from embodied interaction does not always emerge in propositional form but often appears in different forms of impressions and emotional gradation. Thus, the “sensorimotor coupling between organism and environment modulates, but does not determine, the formation of endogenous, dynamic patterns of neural activity, which in turn inform sensorimotor coupling” (Thompson, 2007, p. 13). Human organisms often successfully act by *directly* producing appropriate responses to material and social affordances as a result of their sensory resonances and corporeal responses, which may be characterized by reciprocity between the interactants. Such practices are primed by socially distributed implicit knowledge, so that the rich intentional and protentional attitudes of others can be tuned into in a mutually reciprocal manner (Hutto and Myin, 2017, p. 140), particularly if the action is closely intertwined with the social affordances involved in the ongoing act. This view implies that embodied activity *transcends* visible bodily signifiers, and it extends to corporeal aspects of the lived body in terms of felt bodily sensations, experiences, and physiological changes.

## 5 The dual aspect of embodiment

Embodiment is a concept that is often used in a rather undifferentiated manner, tending to neglect the aspect of the immaterial and invisible lived body. The distinction between the living physical body and the lived body, as developed by phenomenological philosophy, allows for a differentiation between the physical body (*Körper*) as the *object* of perception (although it is only imperfectly perceivable by oneself) and the invisible lived body as the *subject* of perception (*Leib*). The body is not just a mechanical device for sensory input and motor output, but it has a lived side to it, which “feels and senses itself, and this self-affection is the basis of its perceiving and acting relation to the environment” (Fuchs, 2020, p. 3). The lived body, or *Leib*, cannot be perceived at all with the five senses (sight, hearing, touch, smell, and taste), and the person is therefore typically not consciously aware of it (with the exception of experiencing a sudden perturbation such as deep shock or sharp pain, which may momentarily change the tacit to an attentive mode of awareness (Wehrle, 2020, p. 507)). Normally, the lived body constitutes “the pre-reflective background and medium of our world-directed perspective, the center from which we see, act, and live without paying attention to it” (Fuchs, 2020, p. 2). Therefore, the lived body is the “mediator of a world” (Merleau-Ponty, 2012, p. 146) and may afford the subject with something both more and other than mere information (Sheets-Johnstone, 2016).

Human embodiment is thus inherently twofold: it is *lived* as well as *physical*, simultaneously subject as well as object of experience. Whereas the anatomical body has clear physical boundaries (e.g., the skin), the immaterial *Leib* transcends these boundaries by means of pre-reflective (inter)corporeal resonance mechanisms with Other (e.g., knowing as the driver of a car that it fits through a tight gate) and others (e.g., processes of mutual incorporation). This conceptual differentiation implies that, as human beings, we intrinsically have a dual perspective: a (normally taken for granted) first-person-centric perspective in which we are fundamentally oriented toward the world (and implicitly toward ourselves), and a third-person perspective of an “ex-centric positionality” (Plessner, 1975, p. 325), which allows for conscious awareness and reflection.

The enactive notion of the mind as being embodied implies that it should be seen as neither solely subjective nor purely objective but rather as a bodily-corporeal structure of human existence that integrates both the lived and the living body, and the situated affordances of the environment (Varela et al., 2016; Fuchs, 2020). As Fuchs (2020) suggested, the mind is not a separate entity from the body, but it rather *is* a bodily subject. Through its experience it is part of the lived body, mediating it in conjunction with the objective body and with the world. Over time, the “dialectics of *Leib* and *Körper* unfold [...] and become the dynamics of lived (present) and sedimented (past) experience, or of process and structure mutually turning into each other – which is precisely what we call *learning and development*” (p. 9; original emphasis).

The concept of the *Leib* allows for a precise theoretical intervention in the discussion of practical corporeal engagement in FL learning. The mind and its worldly environment are mutually

and continually constituting each other in dynamic relationships. This conception of embodiment implies that our knowledge of the world is inseparable from our experiences of (and through) the lived body that we are (Popova and Racaszek-Leonardi, 2020). The lived body as the medium of our sedimented and agglutinated experience remains outside our range of conscious awareness, which might explain why it has not been given the attention it deserves in pedagogical FL theory and practice.

## 6 Language and embodiment

Living language plays a formative role in shaping human thought and experience because it leaves its traces in the structure of the human body, particularly in its neural structures (see above). Through bodily development and learning, “a circularity of living process and solidified structure [is formed], continuously modifying each other” (Fuchs, 2020, p. 3). Linguistic symbols acquire meaning through language use and grounding in perception, action, and intercorporeal-affective responses, from which more abstract thought emerges. Language structure therefore is closely intertwined with the experience of embodied human relation to the world. Through the basic grammatical structure of a subject working on an object (in the broadest sense) we are reminded of, and express, a range of what we can do as individuals but also as a group with a joint intentional attitude. Through its very structure, “the sentence *enacts its meaning* and thus enables an embodied understanding, or to use an enactivist term, embodied *sense-making* enacts its meaning” (Fuchs, 2016, p. 110; original emphasis). Once we have incorporated the grammatical structure of our first language during our socialization through processes of ‘learning by doing,’ our lived body as our general set of capacities has the ability to form meaningful sequences of words, utterances, and texts without having to explicitly search for grammatical rules or for suitable words and phrases to express our intentions. Speaking one’s own first language can therefore be seen as “a paradigm for participation in a larger collective activity” (Moran, 2024, p. 499).

The human body is bound up not only with the situated material environment but also with the fabric of the language, culture, and society into which the person has grown. The potential for acquiring language as a cultural organization is grounded in the human organism and fostered by multimodal intersubjective interaction. This notion “stresses the centrality of coacting agents who extend their worlds and their own agency through embodied, embedded processes of languaging behavior rather than uses of an abstract language system” (Thibault, 2011, p. 211). The collective human constitution of the world is not achieved by its creation in a constructivist sense but by disclosing its intersubjective significance (Tewes et al., 2017, p. 2). A key characteristic of human existence (*Dasein*), therefore, is the human “being with” others (*Mitsein*), according to Heidegger (1927). On this view, language is not an abstract symbolic system but “a network of meanings evoking a certain way of embodied being-toward-the-world [...] or acting-toward-the-world” (Fuchs, 2016, p. 111). Language thus is dependent on human embodiment and on social practice, or in short: on embodied sociality. Language is not something we add to a range of existing cognitive capacities but a fundamentally new way of being embodied, evolving through processes of socialization

and lingualization so that each of us is also a linguistic body in a community of other linguistic bodies (Di Paolo et al., 2018).

## 7 The relevance of the lived body

Actions have social meaning, and agency takes place in a web of cultural structures (Anderson, 2003). Theories of embodiment can be deceptive if they are “rooted in a metaphysics of presence that positions bodies and their perceived practices as self-evident rather than phenomena constituted by historical formations of power” (Flores and Rosa, 2019, p. 147). Considering the historical, cultural, and social formation of a person, “we are never purely individual, but always already part of a history, culture and generativity, and indeed, a past that has never been present for us” (Merleau-Ponty, 2012, p. 252). If agency is situated in the present but influenced by structures of the past, engagement with the present, and orientation to the future, as Merleau-Ponty (2012, p. 137) posited in his notion of the “intentional arc,” then agency cannot be conceived in terms of individual free will, but as a combination of responses to situated ecological affordances and as sedimented social knowledge at the intersection of corporeal memory and social experience, the latter of which carries with it cultural, power-related, and institutional meanings that can be understood as objective facts. Individual body memory comprises all forms of sedimented implicit memory that have been mediated by the lived body and can be suddenly reactualized involuntarily in one’s everyday conduct (Fuchs, 2017b), as, for example, Proust (1981) famously described in the madeleine experience where the taste of a madeleine cake in his adulthood suddenly transports the narrator’s lived body back into an atmospheric fragment of his childhood where madeleines dipped in tea were enjoyed at his aunt’s place on Sundays.

From a neo-phenomenological perspective (in the German context), the philosopher Hermann Schmitz suggested that language is a system for imposing structure on the corporeally sensed primitive presence (*primitive Gegenwart*), thus transforming the diffuse primitive presence into an evolved presence (*entfaltete Gegenwart*), which can be rationally grasped (or so the person assumes). This is achieved by dissolving a sensed complex and internally diffuse situation into its constituting constellations by casting it in conceptual categories, albeit at the cost of dividing its original overarching atmosphere and losing its unique aura (Schmitz, 2005, pp. 9–13; 18–32).

According to Schmitz, pre-reflective sensing by means of the lived body “is a holistic exchange of corporeal dynamics, a vibrant attunement to meaningful surroundings (...) [which discloses the world] not as a neutral realm of already separate entities but as the atmospheric fields of significant situations, opportunities or quasi-corporeal forces or ‘opponents’ that in the first instance become manifest to the conscious person in form of the ‘internally diffuse meaningfulness’ of holistic corporeal ‘impressions’” (Schmitz et al., 2011, p. 244). The notion of corporeally sensing atmospheric fields of significant situations implies that they viscerally affect the person, for example, “in one’s being corporeally gripped by emotions and room-filling atmospheres” (p. 244). Most of what affects us as human beings in the world eludes our conscious awareness, but it is corporeally sensed and reacted to.

Therefore, embodied learning extends *beyond* bodily movement and includes the aspect of preconscious corporeal and physiological processes, which are triggered by physical activity. The corporeally lived and felt resonances with, and responses to, manifestations of the foreign language and its cultural context have a role to play in FL learning because the lived body is complicit in shaping perception and action (Popova and Raczesek-Leonardi, 2020). In fact, our notion of ‘the world’ is enabled (and restrained) by the capacities inherent to the physical and the lived body so that it only exists as far as it is enacted by embodied cognition, which in turn taps into incorporated cultural media, particularly language, to make components of the world explicit to subjective perception.

## 8 Embodied foreign language learning and translanguaging

From an individual perspective, the meaning-carriers of sensuous, non-symbolic perception acquire their orientational potency for emergent subjective meaning through bodily action and (inter)corporeal experience, which have sedimented in the procedural memory of the lived body. Hence, the concept of the lived body has the potential to contribute to the permeation and overcoming of artificial hierarchies and barriers established by cognitivist theories of mind (e.g., separating functions of the brain from those of the body and separating the organism from its environment, but also separating named languages). Transferred to intercultural FL learning, the concept of meaning as situationally emergent implies that conceptualizing students as learning the foreign language merely at the cognitive level is not the whole story. Rather, learners are seen as pre-reflectively adapting their mindful bodies to the sounds, artifacts, structures, and conceptualizations of the foreign language and its cultural context by actively engaging in dialectical and vibrant body-brain-ecological attunement processes in the action-oriented FL classroom. Learners engage bodily with diverse culturally framed situations, characters, and feelings as they inhabit different spaces. This is not always achieved on their own but also in collaboration with their peers, which opens up possibilities for listening into their lived bodies and collaboratively reflecting on their respective subjective feelings and sensed resonances with the FL language, and using it for communication in unfamiliar FL-framed sociocultural situations. The scope for FL teaching and learning can be extended by this corporeal dimension through systematically training learners’ attentiveness to the resonances of their lived body with the situated manifestations of the foreign culture and to the pre-reflective intercorporeal communication with the interlocutors’ bodies.

As Thibault (2011) suggested, the grounding of language in the human body allows interactants “to extend their worlds” (p. 211) through embodied, situated languaging behavior, rather than using an abstract language system. The extension of the subjective world is possible because natural everyday language contributes to typifying and anonymizing collective experiences (Berger and Luckmann, 1967, p. 39) which also shapes the subjective formation of concepts and plausibility structures (Witte, 2014, pp. 67–103). This stock of preconscious knowledge “is mostly implicit, prepredicative (i.e., it is not explicitly formulated or available

in the form of judgments), but also pervasive across a group” (Moran, 2024, p. 517). The incorporated assemblages of implicit knowledge, dispositions, and capacities have been derived from our bodily experience of interacting and aligning with ecological affordances, which is shared in principle by others and “which is evoked both in ourselves and in others by our verbal utterances” (Fuchs, 2016, p. 108), as Dudschtig et al. (2014) have clearly shown from a neurophysiological perspective (see above). Bodily systems of movement, pre-reflective corporeal resonances, and language structure are closely intertwined, as language is already present as an “articulation tendency” in our preconscious life (Fuchs, 2024, p. 735).

However, a thought or intention can also be expressed through languaging activities (Thibault, 2011) which extend to bodily semiotic repertoires in conjunction with “external (extrabodily) aspects of situations, environmental affordances, artifacts, technologies, and so on” (p. 215). The notion of languaging thus transgresses the realm of language in the conventional sense of speaking and writing, and extends to a variety of material, lingual, cultural, bodily, and modal resources and capacities “which languaging agents *orchestrate* in real-time and across a diversity of timescales” (Thibault, 2017, p. 82; emphasis in original). This is possible because our imaginative capacity is not only indirectly embodied via semiotic concepts and categories such as language, but it is also directly embodied because bodies themselves communicate via their signifying acts; these may be intentionally deployed or pre-reflectively mobilized by the moving body in relation to a situated affordance. The unmediated processes of the lived body are not restricted to the subjective domain, but they allow embodied agents to connect in a dynamic manner with other human bodies by preconsciously exchanging affects and by intuitively coordinating movements.

## 9 The notion of multimodality in action-oriented foreign language learning

Translanguaging and communicative action-oriented FL learning involves para- and extralinguistic assemblages, some of which can be deliberately deployed by the subject (e.g., gesture, tone of voice, posture), but others cannot be voluntarily controlled (e.g., blushing) (Surkamp, 2014, p. 30), which Goffman (1959) defined as the acting body to unwittingly “give off” (p. 14) or emit signs. Thus, (trans)languaging behavior is deeply embodied, and it transcends verbal expression to include “resources (phonic, graphical, lexicogrammatical, syntactical, and so on) from different languages and modes (verbal, visual, gestural, kinetic, tactile, and so on) [which] are thrown together and integrated in a semiotic repertoire which individuals draw on to produce creative and/or critical interventions” (Li and Lee, 2024, p. 875). According to this view, the situated use of social language emerges together with preconscious corporeal memories and bodily signifiers in spontaneous (trans)languaging activities, which are framed by sociocultural patterns, intercorporeal resonances, and situated ecological affordances.

Since interactive languaging is deeply embodied and bound up with real-time activity on a preconscious plane, effective FL learning must involve the mobilization of the learner's body as an important learning resource and mnemonic device. However, whereas neuroscientific research on L1 and FL embodiment has focused mainly on the effect language usage has on the sensorimotor system, there are only a limited number of studies on the *reverse* effect of sensory or motor influences on cognitive FL processing, e.g., examining how reading comprehension can be enhanced when learners physically perform a story they are reading (Skulmowski and Rey, 2018). Several empirical studies have shown that the use of accompanying gestures can improve the retention of newly learned FL words, structures, and phrases, demonstrating their enhanced accessibility in corporeal and cognitive memory (e.g., Macedonia and Knösche, 2011). More generally, Mavilidi et al. (2015) demonstrated that integrating physical learning tasks into FL classroom activities led to improved learning performance, greater enjoyment of the learning experience, and to a positive attitude toward the FL. This can be seen as an indication that incorporated language is emergent in concert with preconscious body memories and bodily signifying practices from situated languaging activities, making the learning content personally relevant to the individual learner. It also suggests that, if languaging and cognition "is not a (local) state in the brain, but rather a process that crisscrosses physical structures, then it is in a state of *becoming* [...], rather than a state of *being*" (Steffensen, 2015, p. 111; emphasis in original).

When the lived body gets involved in situated learning activities, it carries its past experiences, which have sedimented in its invisible dispositions, into the situation on hand. Hence, whenever someone speaks or writes in their L1, they constantly create something new but also (re)create, and thereby slightly modify, something old, which is embedded in their past lived experience. Conversely, when a learner at an early stage uses the FL, they do not have many (if any) personal corporeal memories tied to the structure, patterns, and conceptualizations of that different language, society, and culture. This sort of relational scarcity of lived traces in corporeal memory (Harris et al., 2003; see above) restricts the FL usage for the learners to the sphere of the immediate present. The FL cannot provide the richness of personal and corporeal connotations to significant FL languaging situations experienced in the past, thus turning everything heard and said in the FL to become "presentist" (Becker, 1992, p. 117). Learners' use of the FL therefore lacks the important personal dimension of related lived experience, affective involvement, and related corporeal memories, which the L1 has, for them, in abundance.

## 10 The notion of transpositioning in action-oriented FL learning

However, the "presentist" state of FL usage cannot stifle learners' overall corporeal and episodic memories, which at the early stages of FL learning are overwhelmingly tied to their L1. Hence, the learner has to be involved with body, affect, and mind in translanguaging activities in the action-oriented FL classroom. Particularly in early-age institutional settings, playful FL learning

is driven by bodily movement and corporeal resonances through which translanguaging is emergent. By way of bodily acting and corporeally resonating with the sounds and rhythms of the FL, repeated language patterns can be firmly incorporated, emerging from somatic practice rather than from cognitive processes. In advanced primary, in secondary, tertiary, and further education, action-oriented and performative FL pedagogies, such as role play, process drama, in-class games, and cultural simulations (e.g., Jones, 1982; Crutchfield and Schewe, 2017), can emphatically integrate aspects of body movement into the learning process. In such contexts, "language emerges spontaneously, triggered by movement, body, imagination. Embodiment is key to such a purpose: in drama we let the body drive, and use language to express what the body is communicating" (Piazzoli, 2018, p. 95). The body-driven use of language does not distinguish between named languages or specific modalities when it resonates with the situated affordances. In action-oriented play in the FL classroom, learners can imaginatively "transposition" (Fuchs, 2014, p. 158) their selves into the FL-framed characters they are inhabiting, but they normally remain aware of the distinctions between their own selves and the inhabited FL characters in a state of "split awareness" (p. 161) at a performative level, as they move back and forth and in-between the linguistic, somatic, affective, and cultural spaces. The notion of transpositioning thus denotes a processual condition that resists understandings of stagnancy and nominalization. Processes of imaginative transpositioning facilitate experiences in the mode of "as-if" between languages and modalities, which provide opportunities for the learners to engage with the FL in cognitive, bodily, and corporeal ways, thus opening up transmodal ways of dealing with potentially problematic and challenging situations (Laner, 2021).

Processes of imaginative transpositioning are not necessarily cognitive projections. Gallagher (2017) defined them as being closer to corporeal "pretending and simulating" (p. 192) in terms of "dealing with affordances" (p. 195) that may include material props and artifacts but also concepts, behavioral patterns, and thoughts. More generally, Withagen et al. (2012) claim that "cultural variations are better thought of as variations in perceptual-motor skills [...] giving rise to a particular responsiveness to certain affordances in the environment" (p. 256). By learners imaginatively transpositioning their selves into moving, breathing, and languaging characters in a play, communicative FL phrases and social patterns of behavior in the FL context are linguistically, emotionally, and corporeally inhabited by the learners in a living context, thus facilitating a more holistic understanding of aspects of the foreign way of life and making it affectively relatable to their own L1-framed life-worlds.

By inhabiting fictional FL-framed characters, learners can temporarily distance their selves from their incorporated language skills and identities, thus freeing up a space to experiment with their semiotic repertoires. This experimentation will inevitably not only involve the FL but also the incorporated L1 and translanguaging so that learners will also explore their own incorporated L1-framed perspectives, attitudes, feelings, bodies, and identities. For emphasizing the relevance of these bodily and corporeal explorations, learners are given the opportunity to ponder their experiences and feelings in a layered manner within and beyond the

play or drama, for instance, by revisiting a scene to contextualize and convey an emotional moment (Rothwell, 2017, p. 152). This procedure can lead learners to recognize their own hitherto taken-for-granted cultural situatedness by becoming aware of the difference in the degree and quality of incorporated linguistic, cultural, and interactive abilities and skills between the first and foreign language, which can be reflected upon and discussed in either language, or a combination of them. By disregarding the institutionalized borders between named languages and between semiotic modes, the translanguaging approach implies “a continual transitioning of one’s positionality and, ultimately, the transcending of singular positionality: transpositioning” (Li and Lee, 2024, p. 876).

Research has shown that “a foreign language engages emotions less than does a native tongue” (Hayakawa et al., 2016, p. 792). This is due to the fact that “[w]hereas a native tongue is acquired through affect-rich experiences, foreign languages are often acquired in less emotional classroom contexts” (p. 792). Hence, FL learners, at least at beginning and intermediate FL learning stages, will be able to express their feelings and resonances more comfortably and in a more nuanced manner in their incorporated L1 but can increasingly also draw on their ever-expanding lived experience with the FL and its cultural context. The practice of translanguaging (e.g., García and Li, 2014) provides a constructive strategy to address the linguistic imbalance by encouraging the flexible use of both the FL and the L1, since the complexity of sensed resonances with the Other is more difficult to express in – for the learners – the foreign language. In conventional FL classrooms, learners’ attention will normally be focused on searching for specific words in their lexicon and applying a plethora of grammatical and syntactical rules (and exemptions from rules) from a textbook, making their use of the FL, in Schmitz (2005, p. 26) terminology, a reductive “constellation,” rather than addressing an incorporated complex and integrated “situation” in which they can effortlessly move in both (or more) languages. Translanguaging in an action-oriented FL classroom can build bridges between the languages by fostering of an “embodied feeling” (Bennett and Castiglioni, 2004, p. 250) for the situated FL in terms of an intuitive understanding of, and adaptive corporeal attunement with, the relevant communicative intercultural situation and its atmospheric fields. The embodied feeling for appropriate (trans)languaging activities can be emphatically fostered by an action-oriented FL-learning practice that combines conscious awareness, bodily action, and corporeal sensation in an integrated manner, or, expressed on an enactive view: The activation of different modality-specific brain areas during language processing reflects the employment of a variety of sensorimotor skills in a situated manner, which emphasizes an embodied approach to language learning.

## 11 Training attentiveness to the lived body in the FL classroom

In intercultural face-to-face interaction, bodily signifying practices can assist learners in facilitating meaningful communication across languages and cultures. The communicative impact of interactants’ limitations in FL vocabulary, gaps in

grammatical or phonetic competence and other linguistic challenges can be reduced by using non-verbal semiotic signifiers. While some non-verbal signifiers may be interpreted similarly across cultures (e.g., smiling, weeping, laughing, gait, body posture, facial expression), others can be charged with culturally diverse meaning (e.g., length of eye contact, physical proximity, frequency of touch, etc.). Linguistic errors can be an obstacle to intercultural communication, but they rarely inhibit the communicative process, as speakers quickly know about the language skills of their interlocutors. This is not the case for the deployment of non-verbal signifiers which are often taken to be valid across cultures. Therefore, violations in non-verbal communicative behavior can be interpreted as inappropriate and potentially offensive (Surkamp, 2014, p. 33) which can lead to frictions in intercultural interaction.

The crucial function of unmediated intercorporeal signifiers in face-to-face interaction is difficult to mediate in abstract conceptual terminology. It is best experienced by the learners themselves, as, for instance, demonstrated by Scally’s (2019) in a class of adult FL students. The students were grouped in pairs, with one student instructed to remain absolutely motionless, while their partner was asked to talk animatedly about how they got there. The one-sided interaction between the pair soon became uneasy, as the motionless listener was increasingly trying to suppress the urge to bodily respond to the semiotic signifiers deployed by the partner to signify that (and how) he was following what was said. The speaker, on the other hand, increasingly leaned forward, trying to elicit some form of resonance from the listener’s “poker body” (p. 118). As one student commented in retrospect, “listening without indicating to my partner that I am following them was the hardest part” (p. 120). This exercise demonstrated vividly to the unexpecting students the impact of missing intercorporeal microtuning with the partner’s body. In this exercise, the students experienced the relevance of intercorporeal reciprocity directly with and through their own bodies, thus becoming aware of the vital intercorporeal level of face-to-face communication.

While Scally’s (2019) class was designed for adult learners at the higher levels of the Common European Framework of Reference for Languages (CEFR), Rothwell (2017) designed and conducted two 9-week sequences of structured process drama classes at the lower end of the CEFR levels for 12- to 13-year-old *ab initio* learners of German at an Australian public school. In the first 9-week unit, the learners took on the roles of forced migrants aboard a ship from Brisbane to Hamburg in 1865, and in the second 9-week unit, the “migrants” found themselves in Berlin in 1961 when the Berlin Wall was built. The action of both largely pre-constructed plots revolved around the experiences of immigrants to a new country using a foreign language. The process drama loosely involved three interwoven kinds of activity, namely *enrolment* (in the sense of learners gradually developing their role), *experiential* (physically carrying out different activities in character), and *reflective* (reflecting on activities, experiences, and feelings through English, German, or translanguaging) (Rothwell, 2017, p. 150). In the first unit, groups of students assumed the roles as members of a family of forced migrants on the ship, supported by related props and realia, but also by having available useful German phrases and expressions on the blackboard. Students imaginatively transpositioned themselves into the characters, place, and time,

for instance, by deciding which four items they most wanted to take with them, by expressing their family relationships and their feelings upon departure from Brisbane, by interacting with fellow passengers on the ship, by being interviewed upon arrival by German immigration officers, by filling in a job application, whereas the teacher (and intermittently other students) successively took on the roles of the ship's captain, immigration officer, residents of Hamburg, and others. In the experiential phases, the drama provided inspiring spaces "where learners can *and want to* risk using a new language in imaginary but life-like spontaneous interaction" (p. 153; original emphasis) by living through and feeling with their own body the challenges (including the dual tensions of the classroom requirements and the dramatic need to enter Germany; p. 151) and the mixed "welcome" at their destination (for instance, locals shouting slogans of abuse and welcome upon their arrival at a migrant hostel in Berlin; p. 171). In the reflective phases, students were given tasks of pondering their experiences and feelings in a layered manner within and beyond the drama, supported by methods such as "freezing" a scene from the drama to convey an emotional moment" (p. 152). By reflecting on specific emotional responses and corporeal resonances (and dissonances), students became aware of what cultural others feel and how they would like to be treated from their own perspectives, acknowledging the differences, while "attempting empathy to respect the equal (but different) humanity of others" (Bennett and Castiglioni, 2004, p. 260). The structured reflective phases extended not only to students' multi-perspectival awareness but also to their affective and corporeal-responsive identities by empathetically feeling and pondering "what it is to be the other, both in a home community and away from home" (Rothwell, 2017, p. 166), a potentially conflictual experience which some of the learners might have made themselves.

The reflective phases could have been extended to focusing on sensing and discussing some corporeally felt resonances with the immediate situated cultural (and historical) context and the pre-reflective signifying practices of their body in certain dramatic situations. Guiding questions for raising to conscious awareness some of these preconscious corporeal experiences could be: How do I feel experiencing situations framed by another language and culture? How do I feel cultural otherness while acting out aspects of imagined situations in the FL? What are my felt corporeal resonances and responses with foreign words and phrases in the process of hearing or articulating them? In what way do I feel an expansion (relaxation) or contraction (tension) of my body with particular FL-framed activities? Which FL-framed experience affected and attracted me most? Do I feel anxious speaking the FL before my peers, and why? How do I sense the atmosphere of foreign words and phrases in the process of articulating them? What are my feelings toward aspects of the cultural other?

In retrospectively evaluating their new experience of learning the FL through multimodal activities, Rothwell's students were appreciative of the involvement of imagination, enrolment, experience of life-like language use through different imagined roles and perspectives, emotional involvement, and bodily activation (pp. 162–166) which challenged them to question taken-for-granted assumptions. As one student commented, "before this year I didn't enjoy learning a language but now I do... it is more

affective (sic) *doing things hands on*" (p. 163; emphasis added). The student implicitly acknowledged that their body was not only physically involved in FL-learning activities but that it also created meaning "hands on" which contributed to repertoires of procedural corporeal knowledge by employing their motor system.<sup>3</sup>

The embodied approach to FL learning, as proposed in the present article, emphasizes training attentiveness to one's own corporeal resonances with the sensed FL manifestations which are made explicit through verbal explication. Thus, the situated affective background to one's perception and action is raised to conscious awareness. The attentiveness training is not meant to be a stand-alone approach in the FL classroom but an additional level in the FL learning process which enriches the situated bodily and cognitive learning experience by including learner's affects, as summarized in Table 1.

Training learners' attentiveness to corporeal attunements and resonances with manifestations of a foreign language can be implemented from CEFR levels A1 to C2 at varying levels of intensity and longevity, from short role plays à la Scally's (2019) to elaborate process drama à la Rothwell (2017). As Skulmowski and Rey (2018) concluded in their review of educational embodiment research, higher levels of integration of bodily activity into the learning task is generally more effective than incidental task integration, and higher levels of bodily engagement, such as performance of bodily activities and locomotion, are normally preferable to lower levels of bodily engagement, such as seated activities (p. 8). However, for the purpose of training attentiveness to corporeal resonances, their conclusion is not necessarily applicable, depending on the age of learners and the task design. Elaborate forms of corporeal attentiveness-exercises might sometimes seem impractical due to time constraints and shortage of materials but even simple action-based exercises with corporeal attentiveness training can enhance the awareness of one's pre-reflective corporeal resonances and responses, as Scally's (2019) has demonstrated, and thus contribute to a personally more meaningful learning experience.

Achieving corporeal attentiveness presupposes that it is addressed regularly and in a structured manner in the action-oriented FL classroom. However, it also presupposes that the teachers themselves have been trained not only in designing appropriate action-oriented scenarios but also in techniques that engage the learner's kinaesthetic body, their emotion and imagination, their corporeal intelligence, and their intellectual faculties (Crutchfield and Sambanis, 2017, p. 124). These techniques are also applicable to the teachers' critical attentiveness regarding their own corporeal resonances and responses when acting in the FL classroom so that they can sustain an unbiased attitude when it comes to students' somatic-cognitive learning efforts, including dealing with unexpected learner responses. Maintaining a trustful and inclusive classroom atmosphere is

<sup>3</sup> Sambanis and Walter (2019) provide numerous examples of action-oriented scenarios for several levels of FL learning. However, the preconscious aspect of the learners' sensed resonances (and dissonances) with the embodied FL-use were not thematized, and phenomenological research was not considered.

TABLE 1 Differences between the cognitive and the embodied approaches.

Didactic concept	Cognitive approach	Attentive embodied approach
Methodology	Explicit learning	Implicit learning, bodily and preconscious
Didactic approach	Instrumental and functional	Affective
Capacities involved	Brain centered	Body and brain centered in pre-reflective attunement with situated affordances
Overarching objective	Declarative knowledge	Procedural <i>and</i> declarative knowledge, attentiveness to the lived body
Content	Structured, output oriented learning from coursebooks	Body mobilization, transpositioning, attentiveness to corporeal resonances
Assessment	Tests and examinations of “objective” learning outcomes, identical for the whole class	Interactive and performative, in sync with the affects of the lived body

essential for learners to relax their normal composure and discuss their very personal feelings vis-à-vis their felt resonances when taking on a FL-framed character, even if most of the situated corporeal resonances occur below the threshold of conscious awareness, and therefore go unnoticed.

Training attentiveness to the felt resonances and drives of the lived body does not imply that the corporeally felt sensations of the lived body can in any way be fully raised to conscious awareness, or that they somehow can be intentionally manipulated. Rather, the purpose of training attentiveness to corporeal resonances and responses to the FL in its situated context of social use is to sensitize FL learners for the role of their lived body in interaction, and to raise to conscious awareness *some* of the sensed corporeal resonances with, and responses to, actively using the FL so that their operational functionality can be analyzed retrospectively in the action-oriented FL classroom. The conscious awareness of how their lived body resonates with and responds to the FL in principle provides personally felt feedback of how and to what extent the learner will engage with the subject-matter, and what insights they might derive from their pre-reflective corporeal involvement.

However, the influence of the learner's lived body on FL learning processes eludes conventional scientific analysis and evaluative pedagogical assessment, as it is intimately integrated with the complexity of emergent and integrated properties of affective, environmental, and social dynamics of the subjectively lived experience. The corporeal resonances and responses vis-à-vis the linguistic and cultural Other are actually *lived* in every moment, and this highly subjective and lived quality eludes third party observation and quantification in the sense of applying predefined categories to the spontaneous (languaging) behavior and enactments of learners.

## 12 Discussion

The proposed novel conception of FL teaching and learning fundamentally challenges mainstream foreign language pedagogy, which is typically characterized by learning a set of static FL rules and representations to be memorized, based on a Cartesian (mis)understanding of cognition as relating only to the brain, whereas the body is seen as being subservient to cognition. Conversely, notions of embodied cognition suggest that the workings of mind and body are inextricably intertwined, with

thoughts, perceptions, and emotions emergent from sensorimotor experiences in conjunction with bodily action and corporeal resonances. Theories of enactment suggest that the human organism preconsciously endows components of the environment with specific meaningfulness, and the environment provides the organism with specific affordances which facilitate further processes of enactment and meaning making, thus recognizing the agentive nature of the material, social, and cultural environment. Hence, the human organism brings forth (or enacts) its own world through its sensorimotor and neural activity, and the environment, in turn, shapes the organism and orients its sense-making processes. With this conception, notions of enactment and embodiment suggest the implementation of a holistic, body-involving, experiential, and socially driven methodology where learners acquire declarative knowledge of the FL *and* procedural skills of its usage from intersubjective and intercorporeal (trans)languaging activities for participatory sense-making processes, as they inhabit different spaces, often collaboratively with their peers, in dynamic activities of linguistic, social, and cultural transpositioning. Through its scope for transmodality, multisensoriality, transculturality, translanguaging, and transpositioning, formal FL education is better positioned than most institutional disciplines to facilitate learners' performative inquiry by 'in-the-flesh' exploration of fragments of the foreign language and culture.

The regular integration of bodily activities and locomotion into the learning process has several benefits: It noticeably enhances enjoyment of FL learning and levels of FL embodiment (Mavili *et al.*, 2015) because richer opportunities for tacit learning, activation of the body schema, and procedural body memory are provided, thereby reducing the initial relational scarcity in FL learning by corporeal means, supported by translanguaging activities. Experiences that were personally lived through with one's own body are sedimented in corporeal memory and are reactivated and actualized in relevant situations which constitutes an aspect of FL learning that has been neglected by mainstream educational methodologies, resulting in a weak level of emotional involvement on the part of learners (Hayakawa *et al.*, 2016). Equally important as body mobilization is the systematic training of attentiveness to subjective corporeal resonances with, and responses to, manifestations of the FL and its cultural context, because it creates an awareness on the part of the learner that not only the mind but also the body is learning in action-oriented settings, and that both are closely entwined (Rothwell,

2017). Corporeally attentive learners also become cognizant of their own pre-reflective feelings toward the FL and its cultural context and the way it influences their levels of engagement with the learning experience. Attentiveness to bodily experiences and corporeal resonances contributes to fostering somatic vigilance for the operative functionality of unmediated (inter)corporeality in face-to-face communication, particularly in regard to sensing the intended meaning in complex semiotic languaging activities and in processes of participatory sense-making. What was corporeally sensed as striking resonances can in principle be made explicit through attentiveness and reflective verbal explication. Conversely, learned items appear to be more meaningful to the learner when the situated affective background shines through.

Through each learner's corporeal resonances and responses to using the FL or translanguaging in a socially and culturally situated manner in processes of intercorporeality and transpositioning, the integrated semiotic repertoires of the learner are brought into play in terms of mobilizing diverse languages and modalities. Training attentiveness to the lived body's responses is essential for each learner not only in providing a personally relevant learning experience of embodied multimodality and sociality, but also drawing learners' mindfulness to them, thereby activating an additional layer of FL learning which can be useful for effective communicative learning and behavior, particularly in intercultural contexts. Presently, elaborate forms of performative FL learning and training attentiveness to the resonances, stirrings, and drives of the lived body may not always be in alignment with institutional demands for public accountability and efficiency with their emphasis on quantifiable outcomes of structured input. However, implicit learning, involving enactment, embodiment, transpositioning, and attentiveness to the resonances, responses, and drives of the own lived body, essentially contributes more generally to the modification of learners' corporeal presence in terms of saturating the rich experience of their own embodied existence.

## References

Anderson, M. L. (2003). Embodied cognition: a field guide. *Art. Intell.* 149, 91–130. doi: 10.1016/S0004-3702(03)00054-7

Atkinson, D. (2011). “A sociocognitive approach to second language acquisition: How mind, body, and world work together in learning additional languages,” in *Alternative Approaches to Second Language Acquisition*, ed. D. Atkinson. (London, NY: Routledge), 143–166. doi: 10.4324/9780203830932

Atkinson, D. (2014). Language learning in mindbodyworld: a sociocognitive approach to second language acquisition. *Lang. Teach.* 47, 467–483. doi: 10.1017/S0261444813000153

Austin, J. L. (1962). *How to Do Things with Words: The William James Lectures Delivered at Harvard University in 1955*, ed. J. O. Urmsen. Oxford: Clarendon Press.

Becker, A. L. (1992). “Silence across languages: an essay,” in *Text and Context – Cross-Disciplinary Perspectives on Language Study*, eds. C. Kramsch, and S. McConnell-Ginet. (Lexington, MA: Toronto: Heath and Co.), 115–123.

Bennett, M. J., and Castiglioni, I. (2004). “Embodied ethnocentrism and the feeling of culture: A key to training for intercultural competence,” in *Handbook of Intercultural Training* (3rd ed.), eds. D. Landis, J. M. Bennett, and M. J. Bennett. (Thousand Oaks, CA: SAGE), 249–265. doi: 10.4135/9781452231129.n10

Berger, P. L., and Luckmann, T. (1967). *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. London: Penguin Books.

Chemero, A. (2003). An outline of a theory of affordances. *Ecol. Psychol.* 15, 181–190. doi: 10.1207/S15326969ECO1502\_5

Crutchfield, J., and Sambanis, M. (2017). “Staging otherness: three new empirical studies in *Dramapädagogik* with relevance for intercultural learning in the foreign language classroom,” in *Going Performative in Intercultural Education. International Contexts, Theoretical Perspectives and Models of Practice*, eds. J. Crutchfield and M. Schewe (Bristol: Multilingual Matters), 123–144. doi: 10.2307/jj.22730472.11

Crutchfield, J., and Schewe, M. (eds.) (2017). *Going Performative in Intercultural Education. International Contexts, Theoretical Perspectives and Models of Practice*. Bristol: Multilingual Matters. doi: 10.21832/9781783098552-002

De Jaegher, H., and Di Paolo, E. (2007). Participatory sense-making: an enactive approach to social cognition. *Phenomenol. Cogn. Sci.* 6, 485–507. doi: 10.1007/s11097-007-9076-9

Di Paolo, E., Buhrmann, T., and Barandiaran, X. (2017). *Sensorimotor Life: An Enactive Proposal*. Oxford: Oxford University Press. doi: 10.1093/acprof:oso/9780198786849.001.0001

Di Paolo, E., Cuffari, E. C., and De Jaegher, H. (2018). *Linguistic Bodies: The Continuity between Life and Language*. Cambridge, MA: MIT Press. doi: 10.7551/mitpress/11244.001.0001

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Doughty, C. J., and Long, M. H. (2003). "The scope of inquiry and goals of SLA," in *Handbook of Second Language Acquisition*, eds. C. J. Doughty and M. H. Long. (London: Wiley-Blackwell), 3–16. doi: 10.1002/9780470756492.ch1

Dudschg, C., de la Vega, I., and Kaup, B. (2014). Embodiment and second language: automatic activation of motor responses during processing spatially associated L2 words and emotion L2 words in a vertical stroop paradigm. *Brain Lang.* 132, 14–21. doi: 10.1016/j.bandl.2014.02.002

Flores, N., and Rosa, J. (2019). Bringing race into second language acquisition. *Mod. Lang. J.* 103 (Suppl. 2019), 145–151. doi: 10.1111/modl.12523

Fuchs, T. (2014). The virtual other: empathy in the age of virtuality. *J. Consc. Stud.* 21, 152–173.

Fuchs, T. (2016). "The embodied development of language," in *Embodiment in Evolution and Culture*, eds. G. Etzelmüller and C. Tewes. (Tübingen: Mohr Siebeck), 107–128.

Fuchs, T. (2017a). "Intercorporeality and interaffectivity," in *Intercorporeality: Emerging Socialities in Interaction*, eds. C. Meyer, J. Streeck, and J. S. Jordan. (New York: Oxford University Press), 3–23. doi: 10.1093/acprof:oso/9780190210465.003.0001

Fuchs, T. (2017b). "Collective body memories," in *Embodiment, Enaction, and Culture: Investigating the Constitution of the Shared World*, eds. C. Durt, T. Fuchs, and C. Tewes. (Cambridge, MA: MIT Press), 2017, 333–352. doi: 10.7551/mitpress/9780262035552.003.0018

Fuchs, T. (2020). The circularity of the embodied mind. *Front. Psychol.* 1:1707. doi: 10.3389/fpsyg.2020.01707

Fuchs, T. (2024). The not-yet-conscious. Protentional consciousness and the emergence of the new. *Phenomenol. Cogn. Sci.* 23, 717–742. doi: 10.1007/s11097-022-09869-9

Fuchs, T., and De Jaegher, H. (2009). Enactive intersubjectivity: participatory sensemaking and mutual incorporation. *Phenomenol. Cogn. Sci.* 8, 465–486. doi: 10.1007/s11097-009-9136-4

Gallagher, S. (2017). *Enactivist Interventions: Rethinking the Mind*. Oxford: Oxford University Press. doi: 10.1093/oso/9780198794325.001.0001

Gallese, V. (2008). Mirror neurons and the social nature of language: the neural exploitation hypothesis. *Soc. Neurosci.* 3, 317–333. doi: 10.1080/17470910701563608

García, O., and Li, W. (2014). *Translanguaging: Language, Bilingualism and Education*. London: Palgrave. doi: 10.1057/9781137385765

Gibson, J. J. (1979). *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.

Goffman, E. (1959). *The Presentation of Self in Everyday Life*. Garden City, NY: Doubleday.

Harris, C. L., Aycicegi, A., and Gleason, J. B. (2003). Taboo words and reprimands elicit greater autonomic reactivity in a first language than in a second language. *Appl. Psychol.* 24, 561–579. doi: 10.1017/S0142716403000286

Hayakawa, S., Costa, A., Foucart, A., and Keysar, B. (2016). Using a foreign language changes our choices. *Trends Cogn. Sci.* 20, 791–793. doi: 10.1016/j.tics.2016.08.004

Heidegger, M. (1927). *Sein und Zeit [Being and Time]*. Tübingen: Max Niemeyer.

Hutto, D. D., and Myin, E. (2017). *Evolving Enactivism: Basic Minds meet Content*. Cambridge, MA: MIT Press. doi: 10.7551/mitpress/9780262036115.001.0001

Jones, K. (1982). *Simulations in Language Teaching*. New York: Cambridge University Press.

Kasper, G., and Wagner, J. (2011). "A conversation-analytic approach to second language acquisition," in *Alternative Approaches to Second Language Acquisition*, ed. D. Atkinson. London, NY: Routledge, 117–142. doi.org/10.4324/9780203830932

Laner, I. (2021). Reflective interventions: enactivism and phenomenology on ways of bringing the body into intellectual engagement. *Phenomenol. Cogn. Sci.* 20, 443–461. doi: 10.1007/s11097-020-09673-3

Lantolf, J. P. (Ed.). (2000). *Sociocultural Theory and Second Language Learning*. Oxford: Oxford University Press.

Larsen-Freeman, D. (2010). "Having and doing: Learning from a complexity theory perspective," in *Conceptualising 'Learning' in Applied Linguistics*, eds. P. Seedhouse, S. Walsh, and C. Jenks (London: Palgrave Macmillan), 52–68. doi: 10.1057/9780230289772\_4

Li, W., and Lee, T. K. (2024). Transpositioning: translanguaging and the liquidity of identity. *Appl. Ling.* 45, 873–888. doi: 10.1093/applin/amad065

Long, M. H. (2015). *Second Language Acquisition and Task-based Teaching*. Malden, MA: Wiley-Blackwell.

Macedonia, M., and Knösche, T. R. (2011). Body in mind: how gestures empower foreign language learning. *Mind Brain Educ.* 5, 196–211. doi: 10.1111/j.1751-228X.2011.01129.x

Maturana, H. R. (1988). Ontology of observing: The biological foundations of self-consciousness and the physical domain of existence, in *Conference Workbook for Texts in Cybernetic Theory*. American Society for Cybernetics, ed. R. E. Donaldson. Available online at: <https://reflexus.org/wp-content/uploads/003.pdf>

Mavilidi, M.-F., Okely, A. D., Chandler, P., Cliff, D. P., and Paas, F. (2015). Effects of integrated physical exercises and gestures on preschool children's foreign language vocabulary learning. *Educ. Psychol. Rev.* 27, 413–426. doi: 10.1007/s10648-015-9337-z

Merleau-Ponty, M. (2012). *Phenomenology of Perception* (D. A. Landes, trans.). London: Routledge. doi: 10.4324/9780203720714

Mondada, L. (2019). Contemporary issues in conversation analysis: embodiment and materiality, multimodality and multisensoriality in social interaction. *J. Pragm.* 145, 47–62. doi: 10.1016/j.pragma.2019.01.016

Moran, D. (2024). The phenomenology of joint agency: the implicit structures of the shared life-world. *Phenomenol. Cogn. Sci.* 23, 497–524. doi: 10.1007/s11097-021-09788-1

Müller-Pelzer, W. (2024). Interkulturelles Sprachenlernen in europäischer Perspektive – eine Projektstudie des MONTAIGNE-Programms. 2. Teil: Anwendung. *Zeitschrift für Interkulturellen Fremdsprachenunterricht* 29, 259–281. doi.org/10.48694/zif.3979

Newen, A., De Bruin, L., and Gallagher, S. (eds.) (2018). *The Oxford Handbook of 4E Cognition*. Oxford: Oxford University Press. doi: 10.1093/oxfordhb/9780198735410.001.0001

Norton, B., and McKinney, C. (2011). "An identity approach to second language acquisition," in *Alternative Approaches to Second Language Acquisition*, ed. D. Atkinson. London, NY: Routledge, 73–94. doi.org/10.4324/9780203830932

Otheguy, R., García, O., and Reid, W. (2015). Clarifying translanguaging and deconstructing named languages: a perspective from linguistics. *Appl. Ling. Rev.* 6, 281–307. doi: 10.1515/applrev-2015-0014

Pennycook, A. (2010). *Language as Local Practice*. London, New York: Routledge. doi: 10.4324/9780203846223

Perani, D., and Abutalebi, J. (2005). The neural basis of first and second language processing. *Curr. Opin. Neurobiol.* 15, 202–206. doi: 10.1016/j.conb.2005.03.007

Piazzoli, E. (2018). *Embodying Language in Action. The Artistry of Process Drama in Second Language Education*. London: Palgrave Macmillan. doi: 10.1007/978-3-319-77962-1

Plessner, H. (1975). Die Stufen des Organischen und der Mensch. *Einleitung in die philosophische Anthropologie [Levels of organic life and the human. An introduction to philosophical anthropology]*. Berlin, NY: De Gruyter. doi: 10.1515/9783110845341

Popova, Y. B., and Raczeszak-Leonardi, J. (2020). Enactivism and ecological psychology: the role of bodily experience in agency. *Front. Psychol.* 11:539841. doi: 10.3389/fpsyg.2020.539841

Proust, M. (1981). *In Search of Lost Time* (C. K. S. Moncrieff and T. Kilmartin, trans.). London: Chatto and Windus.

Ritzer, G. (2004). *The McDonaldization of Society*. Thousand Oaks, CA: SAGE.

Rothwell, J. (2017). "Using process drama to engage beginner learners in intercultural language learning," in *Going Performative in Intercultural Education. International Contexts, Theoretical Perspectives and Models of Practice*, eds. J. Crutchfield and M. Schewe (Bristol: Multilingual Matters), 147–171. doi: 10.2307/jj.22730472.12

Sambanis, M., and Walter, M. (2019). *In Motion. Theaterimpulse zum Sprachenlernen* [In motion: Theatre impulses for language learning]. Berlin: Cornelsen.

Scally, G. (2019). Let me hear your body talk: experiencing the word for additional language development. *Scenario XIII* 13, 109–135. doi: 10.33178/scenario.13.2.8

Schmitz, H. (2005). *Situationen und Konstellationen. Wider die Ideologie totaler Vernetzung [Situations and constellations. Countering the ideology of total technological interconnectedness]*. Freiburg, München: Karl Alber.

Schmitz, H., Müllan, R. O., and Slaby, J. (2011). Emotions outside the box: the new phenomenology of feeling and corporeality. *Phenomenol. Cogn. Sci.* 10, 241–259. doi: 10.1007/s11097-011-9195-1

Sheets-Johnstone, M. (2016). "Foundational dynamics of animate nature," in *Intercorporeity, Movement and Tacit Knowledge*, ed. U. Eberlein (Bielefeld: Transcript), 51–67. doi: 10.1515/9783839435793-003

Skulmowski, A., and Rey, G. D. (2018). Embodied learning: introducing a taxonomy based on bodily engagement and task integration. *Cogn. Res. Princip. Impl.* 3:6. doi: 10.1186/s41235-018-0092-9

Steffensen, S. V. (2015). Distributed language and dialogism: notes on non-locality, sense-making and interactivity. *Lang. Sci.* 50, 105–119. doi: 10.1016/j.langsci.2015.01.004

Surkamp, C. (2014). Non-verbal communication: why we need it in foreign language teaching and how we can foster it with drama activities. *Scenario VIII* 28–43. doi: 10.33178/scenario.8.2.3

Tewes, C., Durt, C., and Fuchs, T. (2017). "Introduction," in *Embodiment, Enaction, and Culture: Investigating the Constitution of the Shared World*, eds. C. Durt, T. Fuchs, and C. Tewes. (Cambridge, MA: MIT Press), 1–21. doi: 10.7551/mitpress/9780262035552.003.0001

Thibault, P. J. (2011). First-order languaging dynamics and second-order language: the distributed language view. *Ecol. Psychol.* 23, 210–245. doi: 10.1080/10407413.2011.591274

Thibault, P. J. (2017). The reflexivity of human languaging and Nigel Love's two orders of language. *Lang. Sci.* 61, 74–85. doi: 10.1016/j.langsci.2016.09.014

Thompson, E. (2007). *Mind in Life: Biology, Phenomenology, and the Sciences of Mind*. Cambridge, MA: Harvard University Press.

Varela, F. J., Thompson, E., and Rosch, E. (2016). *The Embodied Mind: Cognitive Science and Human Experience* (Revised ed.). Cambridge, MA: MIT Press. doi: 10.7551/mitpress/9780262529365.001.0001

Vygotsky, L. S. (1986). *Thought and Language* (A. Kozulin, trans. and ed.). Cambridge, MA: MIT Press.

Wehrle, M. (2020). Being a body and having a body. The twofold temporality of embodied intentionality. *Phenomenol. Cogn. Sci.* 19, 499–521. doi: 10.1007/s11097-019-09610-z

Withagen, R., De Poel, H. J., Araujo, D., and Pepping, G. (2012). Affordances can invite behaviour: reconsidering the relationship between affordances and agency. *New Ideas Psychol.* 30, 250–258. doi: 10.1016/j.newideapsych.2011.12.003

Witte, A. (2014). *Blending Spaces. Mediating and Assessing Intercultural Competence in the L2 Classroom*. Boston, Berlin: de Gruyter Mouton. doi: 10.1515/9781614511236

Witte, A. (2023). Bringing the body into play: the corporeal aspect in second language acquisition. *Mod. Lang. J.* 107, 693–712. doi: 10.1111/modl.12861

Xue, J., Xie, D., Lu, X., Niu, Z., and Marmolejo-Ramos, F. (2024). The different effects of a sensorimotor grounding on AoA between bilingual concepts. *Front. Hum. Neurosci.* 18:1387674. doi: 10.3389/fnhum.2024.1387674

Zwaan, R. A., and Taylor, L. J. (2006). Seeing, acting, understanding: motor resonance in language comprehension. *J. Exp. Psychol.* 135, 1–11. doi: 10.1037/0096-3445.135.1.1