

Introduction to a Theoretical Model Based on Embodied Cognition: A Pilot Study of the Diagnosis and Treatment of Hemiphobia

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Purpose: Neurorehabilitation programs have traditionally followed the mind-body dichotomy proposed by Descartes, which resulted in the creation of divergent theoretical frameworks. The purpose of this pilot study is to present a transdisciplinary proposal that integrates human experience via the embodied cognition concept, that is, to explore how the individual relates from their experiential totality. We illustrate this model with a case report: a woman with a physical imbalance caused by stroke, which we diagnose as an experiential disorder and we treat using a transdisciplinary approach. **Methods:** The diagnosis is made in relation to the individual's intentionality when balancing; it is then subjected to an analysis based on embodied cognition. A transdisciplinary therapeutic approach consists of devising an intentionality that takes into consideration all intentional components of her balance. **Results:** Through clinical practice based on embodied cognition, we identify an experiential disorder, which we name *hemiphobia*. This condition is characterized by avoidant motor behavior, hyperactivation of physiological tone, feelings of anxiety, and the suppression of reasoning during the motor task of balancing. We apply a transdisciplinary treatment incorporating intentionality as embodied cognition, body schema, body image, motor therapy, and metacognitive skills. This application improved her motricity skills in balancing and walking. **Conclusions:** The development of a theoretical model based on embodied cognition, in conjunction with the transdisciplinary treatment of hemiphobia, make a more profound and complex learning model possible to achieve the conscious integration of the motor function, the emotional variable, and the cognitive dimension as essential components of neurorehabilitation. **Key words:** *balance, embodied cognition, hemiphobia, intentionality, transdisciplinary*

With the advent of modern science, a notable divide in the study of man occurred. In the 17th century, Descartes¹ divided human reality into 2 opposing and irreconcilable categories: *res cogitans*, consisting of the mental plane, and *res extensa*, the physical world. The reasons for creating these classifications, which are still considered valid today particularly by the health sciences, was not only to further the ontological understanding of man, but also as a way to deal with the subject scientifically.²

Although this approach of dividing the whole into parts³ has brought about a wealth of knowledge in the study of man, theoretical models that offer a systemic view of the dualisms mind-body, subject-object, feeling-reason, and/or part-whole are needed.⁴ So, from the beginning of the 20th century, new approaches that overcome the mind-body split appeared, such as psychoanalysis,⁵ cognitivism,⁶ cognitive-behavior therapy,⁷ humanistic therapy,^{8–10} Feldenkrais therapy,¹¹ Alexander

therapy,¹² constructivism,¹³ post-rationalism,¹⁴ and Hermeneutic phenomenology,¹⁵ among others.

In this pilot study, we present what could be a transdisciplinary proposal in neurorehabilitation. Our work is rooted in the philosophical ideas of phenomenology, which means we are closer to existentialist paradigms, and in the cognitive sciences. By using these frameworks as a guide, we hope to understand the physical and psychological motives (conscious and unconscious) that go toward forming experience.

One of the objectives of this article is to analyze the intentional structure^{16,17} of a woman with stroke and to explicate the ways in which her consciousness (subject) is aware of the postural imbalance in her body (object). This analysis will

clarify the relationship between motor impairment and the conscious and unconscious facets of the intentional act. We also present the specific treatment we have developed, which focuses on rehabilitation as a learning process based on embodied cognition.

Phenomenal Perspective

Phenomenology is an epistemology of human knowledge that focuses on the object as it appears in consciousness. This philosophical discipline places a special emphasis on the fact that the subject (individual) is not an element that can be separated from its environment, but rather the subject can only be understood in relation to an object. This irreducible link between the subject and the object is sustained by the intentional act and can be succinctly defined as the characteristic of consciousness of always being consciousness of something. Thus, intentionality not only connects us to the outside world, but also gives meaning to our personal world. It is considered an act within existence that can encompass the physical world, the world of ideas, and a world where the subject may simultaneously be the object of him/herself.

When consciousness is directed upon an object, it does so with the whole entity, presenting a unified impression of existence,¹⁸ without dividing reality into physical and mental planes. Phenomenology does not seek to study the reality of human beings using disciplinary categorizations, but it more accurately attempts to understand the structure of experience as it is lived by the individual.¹⁷ Via intentionality, our consciousness is constantly involved with numerous elements: the sensory, the perceptual, the mnemonic, the attention, the emotional, the cognitive, and so forth. How this intentional structure is configured defines our relationship with the object. Taking into account the definition of the cognitive sciences in the third person and first person, we hypothesize that consciousness is an embodied cognition consisting of an objective component (the intentional matter) and subjective component (the intentional quality). The former can be studied empirically, and the latter consists of the meaning the person gives to his or her experience.

Intentionality is not merely a philosophical construct. In recent times, cognitive science has found the neurophysiological correlative of intentionality in the emergence theory. From an explanatory perspective, neurobiology claims that the brain is activated in neural patterns and that the synchronicity of these activations in particular areas of the brain is what determines our understanding of the world.¹⁹

Embodied cognition and levels of the embodied experience

Even before the 1990s, there were vocal critics of the psychologism that pervades the study of the mind; in recent times, this criticism has intensified. Many philosophers and neuroscientists believe that the mind can be understood only in relation to the body.^{19–26} Consciousness does not consist of representational reductionism that limits everything to the mental plane, nor is it a cognitive task that links our inner life with the surrounding world. Our existence is possible only through the body, and it is through the experience of the body that existence takes on meaning. The body is not an object at the service of the mind, but rather it is the essential substrate for the emergence of the symbolizing processes. Consciousness as located in the body breaks away from dualist theories and presents us with 2 inseparable entities to the point that whatever happens to one will affect the other.

The concept of the body as a bearer of experience allows us to understand corporality in terms of different levels of experience: body schema and body image.^{17,27,28} The body schema is the sensory system that regulates position and movement, whereas body image relates to the perceptions, attitudes, and beliefs that the individual has developed over the course of his or her life. Both levels work in unison to achieve a full sense of experience, but each has its own characteristics. The body schema is unconscious, tacit, subpersonal, and automatic; body image is conscious, personal, explicit, and dependent on the will.

Up until now, these concepts had been irreconcilable; they not only are opposing notions from the point of view of Cartesian thought, but they also sustain epistemological assumptions (rationalism/empiricism) that are mutually exclusive or “incommensurable” in the words of the science

philosopher Thomas Kuhn.²⁹ From this point of view, these 2 separate categorizations are basic constructs of clinical practice: the body schema is applied in physical rehabilitation, while body image has its place in the treatment of psychological issues.

This theoretical proposal, which was developed by phenomenology and later strengthened via empiricist research,^{17,27,28} views these constructs as complementary and irreducible realities of theoretical models. It is our aim to integrate both levels of the embodied experience in clinical application and to consider them as inseparable entities with respect to clinical practice.

Embodied emotion

After several decades of an eminently rationalistic epistemology, several theoretical models surfaced that reintroduced the idea of the emotional variable as an essential part of knowledge. There are currently several paradigms that underpin the importance of emotion in our lives: post-rationalism,^{14,30,31} emergent constructivism,^{23,26,32} and dialectic constructivism.³³ Feelings are at the core of our mental life and through them we organize both thinking and action.^{23,26,30,31,34,35} Human beings attach meaning to experience via emotions and, in doing so, employ different cognitive and behavioral processes. All motor gestures are related to feelings and are motivated by them.^{20,32} All movement is conditioned by the meaning it possesses; therefore, the quality of an action depends on the emotion that accompanies it.

In neurobiological terms, the affective domain consists of 2 components: emotion, which relates to the visceral and musculoskeletal response, and feeling, which is the subjective sensation one experiences.^{23,26,36} Based on our premise of intentionality as embodied cognition, we classify emotions as intentional matter—their gestural and somatic correlatives are observable by themselves and/or the therapist or via measuring devices. Feeling belongs to the intentional quality, because it occurs in the private domain.

Summary of this theoretical framework

In this section, we recapitulate the fundamental ideas of the model exposed earlier. We rehabilitate a deficit through intentionality based on embodied

cognition, which allows comprehension of the sensation, perception, mnemonic, emotion, cognition, and so forth, of the same knowledge object. We systematize this study through intentional matter and intentional quality. Intentional matter refers to those aspects of the experience that are observed and/or measured: muscle tone, asymmetry, body midline, tachypnea, tachycardia, or trembling. Intentional quality is the subjective sensation that a person has on his or her own experience, such as anger, sadness, anxiety, or calmness. Therefore, any clinical practice (methodology, diagnosis, or treatment) requires understanding of both aspects of the experience in relation to the deficit we want to rehabilitate.

Case Report

We introduce a case report and present an analysis of the intentional structure, diagnosis, and transdisciplinary treatment of a woman who presents a physical imbalance as a result of a stroke.

The subject is a 50-year-old woman who, on November 18, 2007, suffered a subarachnoid hemorrhage in the left hemisphere. After medical stabilization, she presented right hemiparesis and problems with attention and working memory. Phenomenological therapy began 11 months after the stroke. The treatment was undertaken between October 2008 and July 2009 (except for the months of January, February, and March) at a branch of the Los Coihues clinic, in Providencia district, in Santiago (Chile). Each session lasted 1 hour and 30 minutes and took place once a week.

At the start of therapy, motor function was assessed as follows:

- *Static and dynamic balance when standing:* The individual has hypertonia on the hemiparetic side, compensatory hypertonia in the leg on the unaffected side, and displacement of the weight-bearing toward unaffected side. The right side presents pelvic anteversion, inhibition of gluteus medius and quadriceps, and posterior knee lock. The presence of lateral and anteroposterior imbalances intensifies the pattern described above.
- *Walking:* The individual walks with the weight-bearing shifted notably to the unaffected side.

The left side of the body is anteriorized and exhibits compensatory hypertonia. On the paretic side of the body, the muscles of the pelvic retroversion are weak, as are the hip stabilizers and the knee and hip flexors. The takeoff phase gait of the affected leg occurs with the knee straight, so the lateral trunk muscles compensate to achieve the step.

Analysis of the intentional structure

We will explain how to carry out an analysis of the intentional structure of our case report. Additionally, we will elaborate on the dynamic understanding of experiential diagnosis.

Methodology

The evaluation begins with the subject standing with her weight evenly distributed on both sides of her body. The therapist then shifted the person's body toward the affected side and asks her to hold this position for a few minutes. For the duration of this position, she describes her objective (intentional matter) and subjective (intentional quality) bodily sensations.

When we apply this analysis process to our case report, the woman spoke of objective physical manifestations, such as increased muscle tone, misalignment of body parts, facial muscle tension, air retention, tachycardia, and so forth. In regard to the meaning of these experiences, she explained that she was afraid of putting weight down on the affected side, which felt vulnerable; she felt more secure when displaced toward the healthy side.

Diagnosis

The analysis of intentional structure, together with the motor evaluation described previously, demonstrate that the individual was undergoing intense feelings of anxiety with regard to a possible fall and experiencing a compelling impulse to move the body toward the healthy side (phobic behavior). We have named this intentional stream *hemiphobia*. In the following, we are going to explain a dynamic understanding of hemiphobia. This intentional analysis does not imply causality between the physical and mental aspects, but rather suggests that we should understand these

facets as forming part of an integrated process, within the context of embodied cognition.

In our view, Damasio's somatic marker^{23,26} meets all the characteristics of being an intentional act of embodied cognition. A *somatic marker* is a special kind of intentional act that associates a negative feeling with imminent danger. The individual is able to anticipate harmful situations and avoid the consequences of these, having learned from past experience. The activation of a somatic marker generates an alarm signal throughout the body, which responds by exhibiting avoidance behaviors. This response causes the individual to focus on the possible negative consequences of the situation and to react with stereotypical behaviors. An emotional disturbance produces the hyperactivation of physiological tone, which leads to behavior being controlled by the limbic system in an instinctive way, without the ability to reason with the prefrontal areas of the cortex.^{23,26,37}

As to motor function, we note that the phobic behavior is causing 2 motor responses, which are clearly identifiable in the body's imbalance. The leg of the affected side is held with the knee hyperextended and with pelvic anteversion, which causes it to be locked in hyperextension. This anatomical position is ideal for maximizing physical stability and decreasing feelings of anxiety and fear, as it allows the body to rest on bony structures rather than in a position of poor motor control. The second response is observed when the woman's attention is diverted to any intentional object, other than her physical stability. Without any conscious control over her posture, her weight-bearing shifts toward the healthy side. This automatic stabilization mechanism is causing the hypertonia in the left leg. It is important to note that both motor responses, considered pathological by traditional therapy, are perceived as adaptive by our theoretical framework because they are produced for the purposes of reducing anxiety and attaining the most stable body position.

With respect to walking, due to increased stimuli, the pattern intensified further, both with regard to the intentional quality (anxiety) and the intentional matter (the phobic motor response). When walking, the healthy side of the body is responsible for moving the body forward and maintaining balance (the weight is supported on the leg with

a semi-flexed knee). In contrast, the leg on the affected side remains locked in hyperextension, which impedes dynamic stabilization and causes undesirable joint fixation. These motor patterns are a means to reduce anxiety and to achieve a safer way of walking.

In 1990, Kory, Miller, and Todd³⁸ created the term *kinesiophobia*, which is defined as “a condition in which a patient has an excessive, irrational, and debilitating fear of physical movement and activity resulting from a feeling of vulnerability to painful injury or re-injury.” Kinesiophobia is a term mainly used in the literature of pain avoidance, chronic pain, and chronic fatigue, whereas the term *hemiphobia*, introduced in this work, is specifically related to a neurological disorder. Although these terms apply to different disciplinary fields, we can consider the latter as a subtype of kinesiophobia based on its canonical definition.

Treatment

The most important feature of our therapeutic approach consists of regarding the rehabilitation strategy as an intentional act, that is, every clinical procedure should simultaneously take into account the motor function and its meaning. This concept of therapy allows us to consider learning as a unified process involving perception/action.^{19–22,25,39,40} During this case report, we applied rehabilitation strategies based on the Bobath method as part of the intentional matter and metacognitive learning as the intentional quality. These strategies remain closely associated with the aforementioned levels of the embodied experience: sensory stimulation and the action of gravity affect the body schema while metacognitive learning and the active role of the individual transform body image. The body schema is a subpersonal mechanism that cannot be modified via acts of will. However, via sensory stimulation and controlling the action of gravity on the body, it is possible to modify the musculoskeletal system under prereflective conditions. The purpose of the cognitive strategies applied during therapy is to make the individual aware of the perceptions, beliefs, and emotions that influence motor imbalance. Gaining awareness of this information, which is hidden from the conscious mind, allows new meanings to be attached to body image during movement.

Clinical application

Following from the idea that our clinical procedure is composed of both physical and psychological simultaneous treatments, in this subsection we present the metacognitive strategies of the hemiphobia treatment and outline a comprehensive analysis of the transdisciplinary therapy.

The first stage of therapeutic strategy aims to make the individual aware of the bodily processes involved in motor function. To do this, we request the woman to direct her attention to her body image and to describe what she is feeling.

In this first step of the therapy, the attention is directed to the objective aspects of body image – the perceptions. This exercise involves 2 attention foci. In the first, she describes aspects related to the musculoskeletal system, such as sensitivity, position, and alignment of body segments, muscle tone, body midline, rigidity, and asymmetry. In the second, she relates to the intentional matter of emotion, (ie, visceral sensations), such as tachycardia, air retention, chest tightness, trembling, upset stomach, and dry mouth. Gradually, through self-exploration, the woman discovers more elements involved in her motor function.

As the woman becomes aware of her musculoskeletal and visceral sensations, she describes subjective experiences in relation to her experience (the intentional quality of emotion). She gains awareness of how her motor control is closely associated with a feeling. This process is a vital part of the individual's self-exploration because she becomes aware of the meaning behind her motor function.

The second strategy involves attaining emotional distance from discomfort (self-observation). To do this, we ask her to experience the sensations of imbalance with an epochetic attitude,⁴¹ that is, to undergo her experiences as if she were an observer of them. In this way, she can experience her somatic marker while detaching emotionally to observe what happens during the imbalance. Learning this metacognitive ability allows the woman to change the way she experiences motor activity and permits her to attach a new meaning to the emotion that accompanies it. During this exercise, the epochetic experience usually causes her to experience a profound sense of astonishment about her

body and mind. Becoming aware of experiences that were hidden to consciousness enables her to understand her motor control on a deeper and more abstract level.

To conclude this subsection, we describe the methodological integration as follows: each therapeutic strategy should be supplemented by sensory stimulation, conscious attention, subjectivity, and motor control. The successful recovery of motor function depends on the harmonious integration of all these activities. Self-exploration and self-observation exercises must be repeated in as many balance positions as possible (static and dynamic) and during ambulation for the purpose of enriching experience and increasing consciousness of motor function. When coordinating the therapy, it is important to bear in mind the treatment stage, as this determines the emphasis placed on one exercise or another. During the self-exploration exercises, the motor inhibition techniques should be given special attention, because at this point, there is still a great deal of reflex responses occurring. Once a person has learned not to respond to his or her anxiety with a physical reaction, we should mainly employ therapies that facilitate the motor action, as this is a clear indication that motor function is being disengaged from aversive emotion. With its reassignment to a new meaning, we have the chance to improve functionality.

Results

The results of this pilot study can be grouped into 2 large subsections – theoretical and clinical. In relation to the first, we presented a transdisciplinary proposal from the standpoint of embodied cognition. We explained how acts of consciousness are formed by the intentional matter and the intentional quality and described how they relate to levels of the embodied experience (body schema and body image)^{17,27,28} and to the constituents of affect (emotion and feeling).^{23,26,36} In addition, we expounded a transdisciplinary therapy model, which required the integration of physical and psychological strategies to rehabilitate the intentional act under observation.

In relation to the clinical results, we applied this theoretical framework to a woman with a

balance disorder due to stroke, which allowed us to develop an experiential diagnosis and its specific treatment. At the beginning of our therapeutic intervention, we observed that in her imbalance, the individual showed specific alterations in motor, emotional, and cognitive levels. We named this disorder hemiphobia, which is characterized as follows. From the motor point of view, we realized that the lower limb of the affected side kept hyperextension lock, which allowed the body to rest on bony structures rather than a deficient motor control. The objective of this pattern was to reach the maximum physical stability and to feel safer. From the emotional point of view, the individual felt very anxious when the weight-bearing was on the affected lower limb, answering unconsciously with the displacement of her body weight toward the unaffected side. This avoidant answer allowed the individual to reduce her emotional disturbance, in addition to favoring the motor compensations on the unaffected side. At a cognitive level, we found that when the woman imbalanced, she lost the reasoning skill, which implied that she reacted with primitive and stereotyped answers previously learned.

At the end of the treatment period, we assessed the intentional structure while the individual was balancing (static and dynamic) and walking. From this, we concluded that in relation to the intentional matter, the individual increased the weight-bearing on the affected side, decreased the knee lock, and showed a better temporal and spatial symmetry in the gait. Regarding her intentional quality, she verbalized, “I feel my body is more balanced. I feel safer. My body is more relaxed, and it is easier to walk.” Regarding the cognitive level, we observed that her primitive answers diminished the intensity, allowing more conscious learning.

Discussion

As shown in previous sections, the individual who suffers from a hemiphobical disorder, although moving in unbalanced motions, acquired new learning in relation to her motricity and subjectivity. Nevertheless, there are still some questions that need to be addressed in the future. In spite of the improvements achieved during

the therapy, the individual still showed some hemiphobical characteristics. We believe this could be due to the following factors: (1) adaptive mechanisms tend to perpetuate and strengthen over time,⁴² (2) intense emotions are persistent in nature and sustained over time,^{34,42,43} and/or (3) the process of eliminating fear does not occur passively but requires an active form of learning that redefines the meaning attached to the experience.⁴³ Therefore, we conclude that hemiphobia is an adaptive behavior that is difficult to rehabilitate. In relation to our involvement, we surmise that the stimulation provided by a weekly session of experiential therapy was insufficient and several sessions per week could help to improve results (as observed in subsequent research after this pilot study [Martínez-Pernía et al, manuscript in preparation]).

One development that struck us as significant during the exposure to anxiety and emotional distance exercises was the fact that the individual became aware of life experiences she was concerned about but had not been conscious of. Studies carried out by Siegal and Rosen⁴⁴ and Appelbaum⁴⁵ demonstrate that people who increase their tolerance to anxiety through psychotherapy can improve their ideational ability and strengthen the self, which in turn enables them to face the vicissitudes of life in a more head-on fashion.⁴⁶

At the beginning of this work, we enumerated several therapeutic paradigms that do not maintain the mind-body split. Below, we outline the differences between those nonexistentialist approaches and our proposal. Those therapies give more importance to one aspect of the experience, generating a hierarchy in the access to that experience. For example, psychoanalysis prioritizes the childhood experiences; cognitive-behavior therapy, the environment and rationality; cognitivism, the rationality; constructivism, the self-organizing rationality; Alexander therapy as well as Feldenkrais therapy, the prereflective body attention; and post-rationalism, the self-organizing emotionality. On the contrary, the embodied cognition model does not maintain any hierarchy in one element of the intentional structure (sensation, perception, imagination, emotion, memories, language), because all of them are part of the experience. Every aspect of the experience is applied in our methodology,

which provides a more integral learning at the deficit. Any intentional structure element is a way to access the experience; its use depends on the intentional object (deficit), on the part of the experience the person needs to learn, and on the personality.

The most widespread learning model in physical rehabilitation involves the continuous repetition of exercises.^{47–50} Taking into account the models of Bateson⁵¹ and Ausubel,⁵² we infer that these types of learning models are passive, memoristic, and superficial, which could explain the lack of statistical evidence on results achieved via rehabilitation.^{50,53–55} Our proposal, therefore, is to develop a rehabilitation method that is meaningful and resonant on a personal level, which complements exercises with experiences that question the subjectivity and the corporality of the individual. We propose a rehabilitation that is utterly committed to the subject, because we consider that this basis provides a more profound and more meaningful learning experience.^{51,52}

Traditionally, empiricist rehabilitation has focused on generating plastic changes in the cerebral cortex and has neglected other brain structures. Recent research has shown that these changes also take place in the limbic system, which controls the emotional dimension. Neuroscience informs us that the subcortical plasticity is located in the amygdala³⁵; even at this level, neurogenic changes have been found in the structure of hippocampus.⁵⁶ From this wealth of information, we can conclude that brain plasticity occurs not only in the sensory and rational structures, but also in the emotional ones, therefore all of these structures can benefit from rehabilitation.⁵⁷

Up until recently, physical therapy and the functional therapies of psychology have focused on stimulating the nervous system, while overlooking other essential mechanisms involved in regulating the organism. The inclusion of the emotional variable in the rehabilitation process offers us the possibility of stimulating the brain via the neuro-endocrine system. In biological terms, we could say that this therapy consciously intervenes in the central nervous system via the 2 sole access pathways available: the neural pathway that carries information via the nervous system, and the humoral pathway that transports information through the bloodstream.

In spite of the existence of an organic lesion, we think it is essential that neurorehabilitation investigates how new experiences are formed after a brain injury and how these might limit, hinder, or prevent the recovery of the individual. With this in mind, we put forward 3 possible hypotheses for the etiology of hemiphobia: (1) It is an early response aimed toward allowing the affected person to survive and adapt; (2) it is a neurotic personality disorder or trait; and/or (3) it is a coping style. Due to the methodological limitations of this study, we cannot confirm whether these hypotheses are true, but we hope to address these uncertainties in future research.

Conclusions

In this pilot study, we show an alternative theoretical framework to the division proposed by Descartes of mind and body. In addition, we apply this model to a woman with stroke, which allowed us to carry out an experiential diagnosis and its specific treatment. We offer the following 5 conclusions of this work.

First, based on previous phenomenology and cognitive sciences works, we show what could be the basic assumptions of a new theoretical and therapeutic model in neurorehabilitation. We forsake the mind-body dichotomy, and we show the embodied cognition as an object of study. We analyze the individual from the experiential totality, which makes it necessary to investigate sensations, feelings, memories, thoughts, and actions in relation to the deficit we aim to rehabilitate. The clinical practice requires the therapist to consider both physical and psychological strategies, which is a transdisciplinary approach.

Second, we put into practice the proposed model in a case report, allowing us to understand systematically what is happening (in an experiential level) with a woman during her imbalance. We perform an experiential diagnosis that we name *hemiphobia*. This condition can be defined as an avoidant, adaptive, and stereotypical experience, which is exhibited by individuals with motor balance problems. The analysis of the intentional structure showed modification of motor behavior, hyperactivation

of the physiological tone, feelings of anxiety, and the suppression of reasoning skill for the duration of the balancing task.

Third, after performing the hemiphobia experiential diagnosis, we describe different therapeutic strategies. By the conscious integration of sensorimotor stimulation, reassignment to a new emotional meaning, and reasoning, we search for improving the balance and ambulation. At the end of the treatment period, we observe a bigger weight-bearing on the affected side, decreased knee lock, as well as a better spatial and temporal symmetry in the gait. The subjective experience of the individual is greater physical stability and lesser anxiety in facing the imbalance. We observe that the primitive answers are less intense, which allows more conscious learning.

Fourth, the Cartesian dualism has provoked that therapist's work with different parts of embodied experience. Physical therapists work with the body scheme, while psychologists work with body image. Following phenomenology's theoretical framework, we systematize in our case report a treatment focused simultaneously on both levels of embodied experience.

Fifth, neurorehabilitation is a therapeutic discipline based on motor functions and cognitive processes that produce the deficit, but it has forsaken the subjectivity of the individual. We propose to assume the emotionality and the experience as additional elements in the study of disabled persons. The conscious study of these new variables offers the possibility of understanding the human being deeply and to assume their complexity as an inherent element in our professional exercise.

Acknowledgments

We thank the person who participated in this study. In addition, we thank all the professionals of the Los Coihues clinic, in particular its coordinator Marcos Maldonado; the Universidad Diego Portales and its professors Paula Sáez, Eduardo Llanos, and Juan Molinari; and Juan Antonio Guerrero del Amo from the Universidad Complutense de Madrid. We acknowledge the support given to this project by the Fundación Polibea.

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