

**The Use of Argentine Tango as a Form of Rehabilitation for
Parkinson's Disease:
How the embodied experience of dance influences the healing
process**

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Abstract

In the last decade, dance has been used as an innovative form of rehabilitation for different medical conditions. However, there is not much documented research on rehabilitation programs based on partnered dancing. Studies on the use of Argentine tango have proved its feasibility as a form of rehabilitation for Parkinson's disease. The fact that dance is a pleasurable activity for participants enhances program adherence. The aim of this work is to understand the benefits and meanings that tango, a form of partnered dancing, has for people with Parkinson's disease in their healing processes. The thesis first reviews several theoretical frameworks helpful for understanding the benefits of using dance as a form of rehabilitation. I review the theoretical foundations of Dance Movement Therapy and Medical Dance Movement Therapy, philosophical perspectives on the body, and the motivational theory of flow. I also present research that has explored how dance can be used as an innovative tool in rehabilitation. Secondly, I present the results of fieldwork consisting of six in-depth interviews with Parkinson disease patients enrolled in an Argentine tango program offered by a public hospital Neurological Department in Buenos Aires, Argentina. Five themes illustrating the positive perceptions participants had of the program emerged: 1) the role of "others" in a process of curing and healing; particularly the group and the instructors; 2) the use of tango as a strategy to apply in daily life; 3) the sense of liberation, connected with embodied feelings of freedom and security; 4) the importance of recuperating something from the past and its impact on sense of self and; 5) the impact of offering an art-based intervention regarding perception as patients, the medical institution and the physical environment

of care. The results of this study show that Argentine tango should be considered a feasible rehabilitation tool for Parkinson's disease, since as an art form and a non-medical activity it provides positive physical, emotional and spiritual outcomes to participants.

Résumé

Dans la dernière décennie, la danse a été utilisée comme une forme de réhabilitation innovatrice pour différentes conditions médicales. Toutefois, il n'y a pas beaucoup de recherches documentées sur ces programmes de réhabilitation ayant comme objet la danse avec un partenaire.

Les études portant sur l'utilisation du tango argentin prouvent cette faisabilité en tant que moyen de réhabilitation pour la maladie de Parkinson (MP). Le fait que la danse est une activité qui procure du plaisir aux participants renforce l'adhésion au programme. Le but de ce travail est de comprendre les avantages et la compréhension du tango argentin, une forme de danse avec un partenaire, qu'a sur les gens atteints de la MP dans leur processus de guérison. Premièrement, cette thèse revoie plusieurs travaux portant sur la théorie de l'aide de la danse. Ayant comme théorie, les avantages d'utiliser la danse comme forme de réhabilitation. Je révisé les fondements de la théorie de la thérapie de la danse en mouvement, les perspectives philosophiques sur le corps et les flux de motivation de la théorie. Je présente également de la recherche ayant explorée comment la danse peut être utilisée comme un outil innovateur de réhabilitation. Je présente des résultats obtenus en ayant interrogés six patients atteints de la MP qui participent au programme de tango argentin offert par le département de neurologie d'un hôpital public de Buenos Aires, Argentine. Cinq thèmes illustrant la perception positive des participants ont émergés: 1) le rôle des « autres » dans le processus de cure et de recouvrement, particulièrement le groupe et les instructeurs; 2) l'utilisation du tango comme stratégie à appliquer dans la vie de tous les jours; 3) le sens de libération allié

aux sentiments internes de liberté et de sécurité; 4) l'importance de la récupération de quelque chose du passé et son impact sur l'écoute de soi; 5) l'impact d'offrir une intervention artistique basé sur le tango argentin est probable pour la réhabilitation de la MP étant donné que c'est une forme d'art et non une activité médicale, elle procure une réaction physique, émotionnelle, et spirituelle positive chez les participants.

DEDICATION

I dedicate this work, with all my love, to my wonderful family.

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I feel excitement but also concern as I write this very profound part of my thesis. I am excited to recognize and reflect on those who have been so crucial in my development and conclusion of my work, which provided me with an academic voice to my passion for health, dance, and bioethics. I apologize in advance for those I have not fully acknowledged, as I reflect on the support I received during a twenty year career. I truly appreciate each of you for your unique way of being a part of me.

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“Baila, baila Zarite,
porque esclavo que baila es libre...mientras baila.”

“Dance, dance Zarite
because the slave who dances is free...at least while he is dancing.”

[...]

My first memory of happiness, when I was a skinny and disheveled brat, is moving to the sound of drums and this is also my latest happiness, because last night I was in the Congo Square dancing and dancing, with no thoughts in my head, and now my body is hot and tired.

I hit the ground with the soles of the feet and life goes up through my legs, it traverses my skeleton, takes me over, removes my uneasiness and sweetens my memories. The world shudders. Rhythm is born on the island under the sea, shakes the earth, goes through me like a lightning and goes to heaven taking with it all my sorrows.

Isabel Allende

La isla debajo del mar (Allende, 2009)

Introduction

Parkinson's disease (PD) is a progressive neurodegenerative disorder where movement is affected due to a problem in dopamine, a chemical in charge of regulating signals between the nerves and the brain. Currently, it affects roughly 1% of the population over 45 years old and 2% over 65, but with the aging of the population, numbers are expected to increase dramatically in the next decades (Olanow, Stern, & Sethi, 2009). The most common symptoms of PD are bradykinesia, rest tremor, and rigidity of the muscles. Movement problems usually include impaired balance and walking (Parkinson Society Canada, 2010; Parkinson's Disease Foundation, 2008). Other symptoms that usually accompany the disease are fatigue, soft speech, problems in handwriting and others that affect quality of life, particularly as the disease progresses (Doherty et al., 2011; Gaig & Tolosa, 2009; Noreau, Moffet, Drolet, & Parent, 1997; Olanow et al., 2009).

Parkinson's disease is usually treated with medication for symptoms but standard pharmacological treatments do not address gait and balance issues (Earhart, 2009). Therapies recommended to ameliorating movement issues are physical therapy, occupational therapy, speech therapy, and exercises that improve overall health and well-being, balance and flexibility (Earhart, 2009; Hackney & Earhart, 2009a, 2009b).

The Problem of Adherence

Exercise and physical activity have proven to be vital in maintaining health, preventing diseases and promoting well-being and are a central part of many

rehabilitation programs (Armstrong & Bull, 2006; Goodwin, Richards, Taylor, Taylor, & Campbell, 2008; Scully, Kremer, Meade, Graham, & Dudgeon, 1998; World Health Organization). However, due to lack of enthusiasm and motivation, a large proportion of the population does not follow the suggested guidelines for physical activity, with particular groups, such as the elderly and other vulnerable populations, at higher risk of leading a sedentary life (Keogh, Kilding, Pidgeon, Ashley, & Gillis, 2009; Metsios et al., 2008). Following a similar pattern, high dropout rates are found in rehabilitation programs making the problem of adherence and continuity a relevant one. In this context, different physical activities that can make exercise more appealing and even more meaningful have been explored. The diversity of existing dance forms and styles together with their multiple cultural backgrounds make dancing particularly attractive for different populations (Kreutz, 2008; UK Dance and Health. Dance for everybody, 2006). The pleasure, enjoyment and meaning reported by individuals in tango programs seem likely to help adherence and engagement in the rehabilitation program.

Argentine Tango as an Innovative Intervention

In the last several years, the use of Argentine tango has been explored as an innovative intervention to ameliorate health related problems. Several studies suggest the appropriateness of tango dancing when addressing physical improvements linked to balance performance and balance confidence due to the participants' increased strength, flexibility, functional mobility and walking speed (Earhart, 2009; McKinley, 2008). In a recent study, along with improvements in gait, balance and upper extremity function, participants who partook in a tango program demonstrated

a significant reduction in disease severity, suggesting that long-term participation in tango may modify the progression of the disability (Duncan & Earhart, 2012). In addition to physical changes, studies have shown a high rate of adherence and high levels of self-reported enjoyment, making this innovative approach a very suitable and compelling option for individuals with PD condition (Earhart, 2009; Hackney & Earhart, 2010; Hackney & Earhart, 2009b; Madeleine E.; Hackney, Kantorovich, & Earhart, 2007).

Conjunction of Physical benefits with Enjoyment

Indeed, research shows that dance is a very good source of movement for our bodies and the fact that many people find it a very enjoyable activity makes it an invaluable resource as a therapeutic tool (Belardinelli, Lacalaprice, Ventrella, Volpe, & Faccenda, 2008; Berrol, 1990; Duncan & Earhart, 2012; Earhart, 2009; Haboush, Floyd, Caron, LaSota, & Alvarez, 2006; M. Hackney & Earhart, 2010; Palo-Bengtsson & Ekman, 2002). Research in the field has proven that while dancing can be an appropriate form of exercise or physical activity with a positive correlation in physiological, emotional, cognitive and social levels, it is also practiced with high-perceived enjoyment by almost all participants. As we will see later, the inherent fun and joy that people experience while they dance may be a key factor in rehabilitation and may be linked to particular mechanisms that facilitate not only the attendance and continuity in the programs but also the repetition of the learnt cognitive skills leading to a good implementation of strategies.

Psychosocial Benefits

Due to the particular characteristics of dance, several additional improvements were also reported in tango cohorts. These benefits are presumably related to the impact of dance's psychosocial components (Goodill, 2005; Ravelin, Kylmä, & Korhonen, 2006). Tango is a leisure social activity, performed to music, taking place in a regulated environment that facilitates close proximity with others, creating the need for mutual understanding, coordination and communication with other dancers (Kreutz, 2008). Also, the challenge involved in learning a new, increasingly complex task adds to the "novelty" component, which plays a key role when considering enjoyment, sustainability, and adherence (Hackney, Kantorovich, Levin, & Earhart, 2007; McKinley, 2008).

Relevance of Dancing, a form of art, in relation to Quality of Life (QOL)

The impact that dancing has on quality of life, which is intimately connected to the fact that dance is a form of expression, is a solid reason and an inspiring foundation for its support as a rehabilitation tool. Research in arts and medicine explores the possible links between dance and health, healing processes and medicine in a wide range (Goodill, 2005; Lippin & Micozzi, 2011; Serlin, 2007)

In fact, dance has shown to bring new meanings to people's life (Goodill, 2005). This, in a moment of vulnerability as encountered during the course of an illness, can be crucial. Interesting enough, meaningfulness has been reported as the strongest predictor of quality of life amongst all the other health care quality of life dimensions including physical, emotional and social functioning, emotional well-being, energy-fatigue and pain (Goodill, 2005). Goodill (2005) has remarkably

suggested that *the value of any intervention that due to its psychosocial components will foster or improve quality of life should not be underestimated when compared with any other treatment that will mainly address physical functioning*. Indeed, this statement supports the concept underpinning the present research. Several studies report improvements in health related quality of life after the finalization of modified dance programs (Belardinelli et al., 2008; Earhart, 2009).

Purpose of the study

The purpose of this study is to understand the meanings that tango dancing, a form of partnered dance, has for people in relation to their health and course of their healing processes when used as a therapeutic rehabilitation approach. It also aims to understand which qualities contribute to make this experience interesting and meaningful. The aim is to explore how participation in a program using Argentine tango influences the forms of knowing, perceiving and experiencing one's body, movement abilities, and healing process of patients with PD.

Philosophical, ethical and practical implications of the study

Different from more traditional approaches used for health problems, medical dance therapy is not a strictly medical or pharmacological intervention. The intervention used in this program was one based on tango dancing, a human activity involving the use of body movements in relation to the environment and other human beings, usually pursued for pleasurable reasons. In that regard, I consider tango dancing more like other human activities or practices that are beneficial to health and well-being, such as the relational aspects of adult-newborn contact and holding

experienced with breastfeeding, “skin-to-skin contact” or “kangaroo mother care”¹. They have gained acceptance in the medical arena due to their proven health benefits. Moreover, early and prolonged skin-to-skin contact is one of the main practices encouraged in the WHO/UNICEF Baby-Friendly Hospital Initiative, a 20-year old global strategy to promote, protect and support breastfeeding (World Health Organization/UNICEF). Furthermore, kangaroo mother care is now considered a routine practice in Neonatal Intensive Care Units (NICUs) caring for premature and ill infants.

The history and knowledge of the implementation of these former interventions may shed light on how to encourage non-medical practices that use people’s own bodily and relational resources with curing or healing purposes. Identifying, promoting and facilitating access to this kind of practices has several ethical implications. First, it subverts the core assumption that curing and healing powers are nearly exclusively the domain of health care professionals. At the same time it endorses, validates, and illuminates this power for patients and other actors of society. Reflecting on how the hegemonic medical system works, Morgan (1998) has stressed the sophisticated mechanisms through which any practice that does not “fit” within the parameters of the mainstream pyramidal structure is either ignored, suppressed, ridiculed, criminalized or simply demeaned. Accounts of nurses working in NICUs explicitly articulate how health care professionals have perceived parents as potentially harmful to their babies while claiming and sometimes unconsciously retaining the place of “appropriate healers” exclusively for themselves. That stance

¹ Skin to skin contact or kangaroo mother care practices consist of having premature babies closely held at the chest of their parents looking for as much skin to skin contact as

prevented for years the possibility of counting on the invaluable presence of what are now considered crucial healing actors for the premature child: “the parents.” The close contact that a mother and the father can provide to a premature newborn may exceed the benefits of incubators (World Health Organization/ Kangaroo mother care: A practical guide).

In addition, keeping in mind that people will turn to doctors in an attempt to take control over uncertainty, unpredictability and vulnerability, sometimes reassurance, not medical technology, may be an appropriate way of addressing feelings of loss of integrity (Morgan, 1998). As we will see later, if we consider the body as an inscriptive surface, we may want to reflect on how power, through different practices, mechanisms and instruments writes on the body surface (see *Body as a text*).

Organization of the thesis

This thesis consists of two sections. The first section (Introduction and Background) corresponds to an exploration of theoretical frameworks from which to understand the outcomes of interventions using dance as a form of rehabilitation. Particularly, I aim to understand where and how the use of tango, as an emergent intervention in patients with Parkinson's disease, can be included and supported as a feasible form of rehabilitation. To do that, I first outline the foundations of Dance Movement Therapy (DMT) and Medical Dance Movement Therapy (MDMT) as well as its connected disciplines. Secondly, since this intervention is based on body movement, I explore philosophical perspectives about the body, in particular phenomenological conceptions based on the history of body schema, body image,

and body awareness as well as its implications for rehabilitation purposes. The importance that enjoyment and pleasure have for adherence led me to dedicate a review to the motivational theory of flow, rooted in concepts of intrinsic motivation and autonomy. To understand the value of dance in rehabilitation, this introduction includes a review of relevant empirical studies, not only to know the outcomes of such interventions, but also to understand particular components that made dance a suitable and innovative tool for rehabilitation.

The second part (Methods, The Role of Others, Reshaping the Self, Environment of Care: Dancing at the Hospital, and Conclusions) consists of the presentation of a pilot project examining a program of modified Argentine Tango sessions offered for patients with PD. This program, recently implemented by a group of neurologists in the Movement Disorder Service of a general hospital, allowed me to explore patients' experiences regarding this emerging modality.

The analysis of the data reveals that the tango program offered at the Neurological Department of the Ramos Mejia Hospital as a form of rehabilitation provided a very positive experience for all the participants. The analysis identified many common subjects that, due to the intrinsic multi-dimensional nature of the intervention introduced in the first chapter, were strongly intertwined. Five key topics emerged as results of the analysis of the TP: 1) *The role of others*; 2) *tango as a strategy*; 3) *a sense of liberation*; 4) *recuperating something from the past* and 5) *Environment of Care*. I will present these themes in the following fashion: Chapter 3, *The role of others*, discusses findings on the role that tango participants, as members of the group, and the teachers, as skilled dancers, played in the process of curing and

healing. Chapter 4, *Reshaping the self*, focuses on how tango may help understand and experience the self in a modified way, by providing feasible strategies to apply in daily life, a sense of liberation and the possibility of recuperating significant aspects of the self. It discusses 1) the use of *Tango as a strategy*, category that represents the findings in relation to how participants “apply” or “make use” of the tango movements and their experiences in the dance in other areas of their lives; 2) *A sense of liberation*, a topic that traverses all the other categories and is strongly connected with the embodied, paradoxical experiences of the freedom and security in movement that participants expressed and; 3) *Recuperating something from the past*, theme that captures the individual central aspect that this intervention had for patients with PD and it is linked with the sense of self and of continuity. Chapter 5, *Environment of care*, analyses the meaning that offering this type of intervention had for participants in relation to the environment (in this case, the hospital), the health care staff and their position as patients. This second part ends with a reflection on the implications of this new strategy, warranting further studies to understand it at its various angles and in its whole magnitude.

1. Background

THEORETICAL FRAMEWORKS

The utilization of tango techniques in rehabilitation is a new approach in physiotherapy and different theoretical frameworks can support its use. This chapter will introduce the necessary theoretical frameworks and concepts to understand the research and application of this practice. I will first briefly define dancing, Argentine Tango, and “modified dance sessions” followed by a presentation of the foundational basis of dance movement therapy (DMT) and medical dance movement therapy (MDMT) as presented by Goodill (2005). Second, I will introduce relevant concepts that have their roots in phenomenology and philosophy of perception due to the role they play in explaining the experience of the lived body. Particularly, I will navigate the historical and conceptual ideas of body schema, body image, and body awareness as basic concepts that support the use of dancing as a feasible form of rehabilitation. The end of this section is dedicated to the introduction of the motivational theory of flow in order to shed light on the notion of enjoyment and pleasure both central to the high adherence rate found in dance programs.

Dancing: A Fundamental Form of Human Expression

The dictionary defines dance as “to move rhythmically usually to music, using prescribed or improvised steps and gestures” (The Free Dictionary). The dance encyclopedia provides several definitions according to different authors. For example, Desrat defines dancing as “the action of moving the body in harmony with a determined measure, and in allocating a given expression to the movements” (Anatole Chujoy, 1967, p. 248). Although it is not possible to identify the origins of

dance accurately due to the lack of physical artifacts, most archaeologists trace dancing as far as 9,000 years ago from paintings of prehistoric times (Anonymous, 2005). Ethnographers such as Clifford reported that people have danced in ritual, play, dramatic enactments, social exchanges or individual artistic activities (Novack, 1998, 2005). In fact, Geertz remarks that these different practices sometimes coincide or even overlap. Whether from an anthropological, cultural, educational, or artistic perspective, dance scholars agree that since its origins, dancing has been an important part of human culture and has played a significant role in ceremonies, rituals, celebrations and entertainment. In this general assertion, dance can be described as a human activity that uses body movement as the instrument or source for expression (McCutchen, 2006; Novack, 1998, 2005).

Dance can also be described as a specific art requiring or not, a formal and sometimes exhaustive training. For instance, Brown and Parsons (2008) define it as a form of art consisting of a confluence of physical movement, rhythm and gestural representation which requires a combination of the human capacity for rhythm, talent for unconscious entertainment and ability to move in a wide variety of forms. Moreover, dancing requires a particular form of interpersonal coordination to use space and time, a capacity that we barely see in any other social context (Brown & Parsons, 2008). In fact, dancing requires a lot of movement and cognitive abilities. The potential for understanding the patterns to achieve that complex coordination has been recently used by neurocognitive scientists interested in understanding how professional or amateur dancers learn highly complex sequences of action. This new

field of research aims to apply this knowledge in the recovery of motor skills after an injury (Bläsing, Puttke, & Schack, 2010; Calvo-Merino, 2010; Cross, 2010).

Argentine tango

From Bantu origin (Africa) tango means “drums” or “a social gathering with dances” (International Encyclopedia of Dance, 1998, p. 91). As it is mostly known today, tango was born in Buenos Aires, Argentina and Montevideo, Uruguay and is mainly an urban phenomenon (Denniston, 2007). In any of its styles, tango salon, Villa Urquiza, milonguero, club, orillero, canyengue, nuevo or fantasia, Argentine tango is danced in a close embrace (most likely borrowed from the Waltz), which involves contact and holding between two people. The man leads and generates the movement, but both dancers share the dance equally, a man and a woman who move counter clockwise on the dance floor. The woman follows the mark of the man but also interprets the movements in a personal style. Turns, twirls, figures and adornments are also included in the dancing. It is very much liked and embraced by people of different ages, ethnicities and genres (International Encyclopedia of Dance, 1998).

Aside from its distinguished close embrace, Argentine tango is characterized by having a non-rigid structure and by including a considerable amount of synchronized walking in various rhythms and directions. This is probably the result of the dance always developing through trial and error, incorporating changes by improvisation and being transmitted from one generation to the other. This non-rigid structure facilitates malleability and creativity. Tango music is generally played in 2/4 time with different instruments such as violin, guitar, piano and the famous

“*bandoneon*.” There are differences in music styles such as milonga, tango waltz, electronic, which are characteristic rhythms of the ‘30s, ‘40s or ‘90s (Denniston, 2007; International Encyclopedia of Dance, 1998).

As a partnered dance, Argentine tango shares certain characteristics with other social dances such as ballroom which is danced in couple, usually with a man and a woman dancing simultaneously even trying to “move as one” (Regan & Spencer, 1994, p. 6). This union provides the enjoyment of the connection and coordination required by moving through space with another person and requires the attention to the cues provided by the other partner.

Social dances allow dancing a variety of styles with their subtle nuances, in addition to their significant differences in movement patterns and rhythms. Different age or ethnic groups can better relate to particular dances connecting, discovering or revitalizing a cultural identity or familiarity, which may result in increased enjoyment, meaningfulness and consequently complete involvement in the activity (Haboush et al., 2006).

Modified dance sessions

In the context of dance as a rehabilitation tool, we should keep in mind that it is most likely to implement a “modified dance session program.” This implies that the program will slightly or significantly differ from the way it is traditionally taught in its recreational, artistic or professional form. Proposing a modified form of dance sessions can have an enriching and multiplying factor. Certainly, from this perspective, dances that may otherwise be excluded can still be considered and used as a rehabilitation tool. A careful assessment of dance elements and technical aspects

of a particular style and their relation with desired outcomes may actually surprise us in the malleability and plasticity that dance styles may have in their adapted forms. An example of this is a modified ballet program addressing an elderly population where most of the class is organized with the focus on the use of arms (port de bras) and basic stretching movements but still using classical music, easy ballet port des bras, pointing-flexing toe exercises or bending-stretching of knees which can even be executed sitting on a chair. As stated by Duignan “Dance sessions can be modified accordingly to account for the client group’s needs; for example, breaking the steps down to be simple and concise, and allowing directions to be followed more easily” (Duignan, Hedley, & Milverton, 2009).

1.1. Dance Movement Therapy and Medical Dance Movement Therapy

Many of the benefits of using dance for healing purposes have been portrayed in theoretical models and clinically applied by DMT. Goodill (2005) describes MDMT as the emerging subspecialty consisting of the application of DMT to the needs of those who have a medical illness. DMT, in turn, consists of the use of movement to “further the emotional, cognitive, physical and social integration of the individual” (American Dance Movement Association, 2011). Through movement DMT can also help to achieve greater self-expression (American Dance Movement Association, 2011; Goodill, 2005).

Dance movement therapy is considered a complementary alternative medicine, categorized as a creative art therapy, which follows the principles of body / mind interaction. Like most complementary alternative medicines, it bases its practices on the paradigms of “whole person health care” (Serlin, 2007). Serlin

explains that “whole person health care integrates the best of medical and psychological practices into a bio-psycho-social-spiritual model” (pp. xviii Vols. 1,2,3).

In 2005, Sharon Goodill presented what might be considered the first book on MDMT: “An Introduction to Medical Dance/Movement Therapy. Health Care in Motion.” The application of DMT theories, extending from purely psychological areas, --such as autism, schizophrenia or mental retardation-- to primarily physical/medical fields, follows the same pattern as other creative art therapies. Fine arts therapy and music therapy already made this transition, with several books specializing in the medical field (Goodill, 2005).

The beginning of the application of DMT with populations suffering from a primarily medical illness is traceable back to the 1970s. As with any new specialty, Goodill clearly situates its first challenge: the task of delimiting its boundaries. The need to explore and enhance the concepts on which MDMT rests, in turn, will benefit and be enriched by the advances encountered in other medical and scientific disciplines (Goodill, 2005).

Foundational concepts for Medical Dance / Movement Therapy

Goodill presents seven interrelated fundamental concepts that form the foundations of DMT: The biopsychosocial model, systems theory, interdisciplinarity, mind-body integration, quality of life, disease/illness and curing / healing differentiation. Some of these concepts are described below and they will help us understand the patients’ experiences at the TP.

Biopsychosocial model

DMT and other mind / body medicines have benefited from the concept of the biopsychosocial presented by Engels in the 1970s by embracing and adopting his vision of “including the patient and not only the illness in the medical model” (Engel, 1977). Opposed to the dualistic vision normally adopted by biomedical models, the biopsychosocial model uses neither binary nor categorical thinking. Rather, it adopts an inclusive perspective that allows thinking in a contextual or “organistic” way (Goodill, 2005, p. 20). Engels’ ideas consisted not only in a scientific proposal but also in a fundamental ideology aiming to reverse his perception of the dehumanization of medicine and disempowerment of patients (Borrel-Carrio, Suchman, & Epstein, 2004). Whole person healthcare theory strongly embraces this inclusive perspective and includes DMT as one of its validated clinical approaches (Graham-Pole, 2007; Serlin, 2007). The biopsychosocial model is especially pertinent for TP since the patient is thought and approached as a person within his/her context thus removing the illness from the centre. Dance as a rehabilitation tool also promotes, from its very roots, the empowerment of the patient and different actors of society other than health care professionals.

System theories

The system theory is based on the principle that all organisms and structures, either biological or social, function at an interactive level, constituting networks of interactions that exceed the simple addition or sum of the parts. Families, groups or biological beings present active homeostasis and move from different forms of equilibrium to disequilibrium cyclically. The “wholes” that each of them constitutes are also in constant interaction with other systems or wholes, modifying them and

exchanging waves of information. DMT profited from this theory of system and based its practices on the concept of “multiple levels simultaneously” (Goodill, 2005, p. 20).

Self-maintenance, self-transformation and activity are three properties of systems directly related to the benefits that dance/movement seeks. These properties are crucial for MDMT since it is expected that 1) movement will allow a certain kind and degree of body transformation to impact on other systems within the same individual (emotional status, mental representations and biological systems such as the nervous, circulatory, etc.) as well as on other systems (health care professionals, relatives, peers, others; 2) physical activity will enhance awareness of the body and allow self-maintenance understood as the internal sensory system that all organisms have to monitor their functioning; 3) activity will facilitate the transformation of the system making it active rather than static (Goodill, 2005; Mendelsohn, 1999).

These three characteristics of systems - self-maintenance, self-transformation and activity - are key concepts to understand the role of the DM Therapist in the healing process. The therapist will be confident that, through movement, something in the distressed person is going to trigger a degree of physical change, which in turn will influence many other systems (American Dance Movement Association, 2011; Goodill, 2005; Mendelsohn, 1999).

Based on this concept of self-maintenance, it is interesting to reflect about self-care strategies and the preventive roles that dance can pose in this arena. Profound and deep-rooted philosophical, psychological, and ethical ideas about autonomy and health care can serve as guidance to be able to understand and support

self-care strategies in medicine better. It will also serve to theorize about the best ways to promote, suggest, prescribe or encourage any kind of therapeutic use of dance in rehabilitation -including TP for Parkinson's disease.

Interdisciplinarity

DMT is based on the art of dance and the science of psychology. It has nurtured its theories and adapted its practices with the knowledge of different disciplines such as “sociology, cultural anthropology, applied kinesiology, traditional healing systems and other mind/body approaches” (Goodill, 2005, p. 21). It tends to incorporate and embrace findings from other disciplines in order to serve the needs of its patients in a better way. As with other interdisciplinary fields, DMT is receptive to building bridges between the sciences and other bodies of knowledge and tries to blur the arbitrary demarcation of boundaries between sciences while keeping imagination and the transfer of knowledge and technology between biomedical sciences alive (Ader in Goodill, 2005, p. 22). Dance Movement Therapists are constantly encouraged to establish enriching working relationships either through collaboration in clinical settings or through research (Goodill, 2005). In the context of an interdisciplinary approach, professionals or other members of a team are actively and continuously participating in a process of communication, planning and acting towards mutually shared goals (Brown & Parsons, 2008; Stewart et al., 2006)

The influence, coordination and cooperation of several disciplines are clearly seen and expected in programs using dance as a rehabilitation tool. Tango and dance teachers, neurologists, neuropsychologists and psychologists and other health care professionals participated in the programming and administration of the TP.

Mind/body integration

Although widely accepted in scientific and popular culture, the distinction between mind and body seems to be reasonably arbitrary (Block & Kissel, 2001; Goodill, 2005). Moreover, even when this demarcation is seen as arbitrary, the metaphors and paradigms of the language that describe mind and body as separate are so strongly rooted in our way of thinking, that we are almost unable to speak and think out of this dualistic body-mind paradigm (George Lakoff in Block & Kissel, 2001). On the other hand, a body of knowledge based on philosophy and other disciplines has significantly grown in the last decades. The mind-body connection started to develop its own methods of research. Psychoneuroendocrinology, is a good example of this interrelationship (Goodill, 2005). It consists of the study of the interactions between the brain and the immune system and attempts to establish the relations between the neuron, behavioral, endocrine and immune responses that allow the organism to adapt to the environment it inhabits (Ader, 1998). Other theories based on phenomenology of perception and embodiment also challenge the dualistic paradigm. In a broad sense, it can be said that mind and body are not two different aspects of a phenomenon where the mind is thought of as the spirit and the body, the matter but a process where the course of bidirectional information is essential and body and mind transform each other in a constant wave (Bläsing et al., 2010; Block & Kissel, 2001; Serlin, 2007). The importance of the mind-body connection might be especially pertinent to TP because it is most likely that the embodied experience of dancing, and particularly of dancing with others facilitates a sense of liberation connected with feelings of freedom and security as we will see in following chapters.

Quality of Life

Of all the concepts that support DMT, quality of life is likely the one which gives a strong foundation, and inspires the willingness to develop new approaches or interventions to ameliorate multiple medical conditions. Numerous findings show the link between psychosocial factors that relate to each other, such as social support, pleasure, happiness and meaningfulness, and give rise to improvements in health care outcomes (Goodill, 2005; Sanderson, 2004). These improvements in health care outcomes make quality of life a growing area of study for Behavioural Medicine and Health Psychology. These disciplines consider this concept genuinely worthy of clinical attention, particularly since medicine has focused not only on the cure and treatment process but also on the path of recovery and adjustment (Goodill, 2005; Lyons, 2006; Serlin, 2007).

Neither easy to define nor to operationalize, quality of life is generally measured by self-reported variables. When speaking about health care quality of life dimensions such as physical, emotional and social functioning, emotional well-being, energy-fatigue and pain are assessed. Interestingly, meaningfulness has been reported as the strongest predictor of quality of life (Goodill, 2005). In addition, based on a study using tango to address depression, credit mindfulness as the mechanism providing beneficial outcomes by interrupting the negative lines of thought which contribute to anxiety and depression (Pinniger, R., Brown, R. F., Thorsteinsson, E. B., & McKinley, P., 2012). Tango, as a pleasurable activity, danced to music, shared with a group of people and danced with a partner can provide physical, emotional, and spiritual benefits that affect quality of life through most of the psychological

concepts described by Goodwill (2005): emotional well-being, optimism, goal setting, sense of control, self perception, self efficacy, connectedness and social functioning. For further knowledge of these concepts see Reeve and Chamberlain (Reeve, 2005).

Disease/Illness Curing/Healing

Achterberg makes an important distinction between disease and illness, keeping the former term for the pathology itself and the latter for the unique and personal ways that the pathology impacts on the individual (Goodill, 2005; Lippin & Micozzi, 2011). Once this distinction is made, the difference between curing and healing becomes evident. Whole person care, integrative therapies and complementary and alternative medicine have focused their attention on the healing process both when the cure is possible or not achievable.

Interrelated Disciplines

Having presented the different theoretical concepts relevant to medical DMT, I will now briefly review several disciplines associated with MDMT. Although each of these related disciplines has its own definition and characteristics, in reality they often overlap and their boundaries are open to different interpretations.

Complementary and Alternative Medicine (CAM)

Complementary and alternative medicine is defined in an “exclusionary fashion” meaning that includes “the practices and products that are not presently considered to be part of conventional medicine” (Goodill, 2005, p. 27). Due to their

characteristics, they are usually based upon holistic perspectives and preventive conceptions.

The U.S. National Center for Complementary and Alternative Medicine (NCAAM)² describes five categories of complementary and alternative therapies, one of them mind/body interventions which includes DMT (NCCAM, 2012). One of the characteristics that this NCAAM highlights is the capacity of the mind to affect the body. This rationale has been criticized because it implies a unidirectional functioning and mind-body split as opposed to the paradigms that challenge the forced mind-body division (Goodill, 2005). On the other hand, Serlin notes that the foundation of the NCCAM by the NIH reflects the extended use of alternative and integrative approaches in medicine in the American population as well as the need to support research and to extend education in the field (DiCowden, 2007). Tango used as a rehabilitation tool for Parkinson's disease can be seen as a form of CAM, where the capacity of the body and the mind to continuously affect each other, plays a significant role. This idea will be further explored through the concepts of body image and body awareness.

Mind/Body medicine

For the U.S. National Institutes of Health (NIH), DMT is a mind-body intervention and is, therefore, a form of CAM. Mind / body medicine is also supported by the idea that health is not the mere absence of disease but “the integration of our environment, body, mind and spirit” (Chopra as in Goodill, 2005, p. 28). Spiritual well-being, in this context, is understood as “*the belief that one's life*

² The NCCAM is one of the 27 Institutes and Centers of the U.S National Institutes of Health's. Its mission is to "define, through rigorous scientific investigation, the usefulness and safety of complementary and alternative medicine interventions and their roles in improving health and health care" (C. Novack, 2005).

has meaning and purpose” (Goodill, 2005, p. 28 italics added). Following this holistic approach, and also including spiritual well-being, Harvard University’s Center for Mind/Body Medicine has stated that when you do not address one of these areas, it will become more difficult to achieve the best possible results in health outcomes (Serlin, 2007)

Creative arts therapy

Creative arts therapy is defined as the use of art with healing purposes. Music therapy and art therapy have gained a great deal of expertise in both clinical settings and research (Pratt, 2004). Applied to a wide range of groups, they have shown benefits for different medical illnesses and populations including health care professionals. The reported benefits rely on the healing potential of creativity which is supposed to enhance affirmation, passion, expression and excitement (Evans, 2007; Goodill, 2005; Graham-Pole, 2007; Jill Sonke-Henderson, 2007).

Elizabeth Woodhams (1995), in her work on “the ethics of arts” claims that the very nature of health, patient and arts are challenged by the experiences of those who have been affected by art in a health care setting. Her working experience in close contact with people suffering from the impact of an illness challenged the core idea that art and creation are restricted for professional artists and not for ordinary people who should be encouraged to maintain their creative and expressive potential until their last days. This idea seems to be particularly relevant in findings of the TP where PD patients expressed how music, dancing and the experience of dancing and creating with others affected their lives and healing processes.

Arts medicine

This new field is concerned with the multiple ways in which art is related to health care and how one can influence the other. Arts Medicine's interests are very broad and range from the study of the lives of health care practitioners to the healing potential of the arts for individuals (Goodill, 2005). It can involve the aesthetic qualities of medical environments such as hospitals or clinics and tries to bring the beauty of the arts to the lives of all patients, their families, health care professionals and staff. It can also focus on the lives of people involved in the medical field and their relationship with art from a historical perspective. Undoubtedly, dance is included within the general meaning of arts, so arts medicine practitioners, passionate in their willingness and openness to include all the relationships between arts and health, embrace DMT (Goodill, 2005; Lippin & Micozzi, 2011; Jill; Sonke-Henderson, Brandman, Serlin, & Graham-Pole, 2007). The chapter dedicated to the impact of offering an art-based intervention through a TP will give us a clear sense of patients' experiences in this realm. (See Environment of care: Dancing at the hospital)

Health psychology

Considered as a subset of behavioural medicine, health psychology is concerned with providing knowledge, education and research that can contribute to the understanding of health and illness. It develops different models aiming to explain people's behaviours, attitudes and emotions in the realm of health care problems. Through theoretical constructions such as: the role of stress in illness, the concept of adherence, motivation, people's representations of their health, and others, Health Psychology is a critical source of literature for DMT (Goodill, 2005; Lyons,

2006; Reeve, 2005; Sanderson, 2005). Sobel (1995) presents evidence on the importance of using interventions that address the psychosocial needs of any given illness. The results of introducing this kind of interventions, he claims, seem to be healthier patients along with a decrease in health care costs.

Dance and movement

Dance as an art or recreational activity generally practiced outside the structure of DMT has proven beneficial effects for all ages and populations. In the last decade several government agencies have put programs in place to promote dancing as a form of exercise, socialization, and nurturing spiritual and community needs. For example, the Arts Council England (Arts Council England, 2012; Arts Council England Annual Review, 2009) develops and promotes the arts across the UK, and invested 1.1 billion pounds of public money in the arts from 2006-2008 to address the benefits of dance to healthy lifestyles. They foster dance as an enjoyable physical activity, and recommend it for disabled or non-disabled, young or old, highlighting the benefits of dance for the entire population (Jermyn, 2006; UK Dance and Health. Dance for everybody, 2006)

As any other form of exercise, dance can be linked to improvements in cardiac, endocrinology and muscular systems. Based on vast research, Goodill (2005) and other authors have tackled on the ways in which dancing can affect stress levels, improve coping abilities, increase self-efficacy, positively impact mood and emotion, and provide a sense of spirituality (Goodill, 2005; Evans, 2007; Jill; Sonke-Henderson & Brandman, 2007). Probably due to the effect in reducing stress and

socializing aspects, dancing was also analyzed as a healing ritual in different cultures (Achterberg, Dombrowe, & Krippner, 2007).

Having presented the theoretical basis and the disciplines associated with DMT and MDMT I will now introduce concepts based on phenomenology and theories of perception including several perspectives of the concepts of body schema and body image that support the use of dance as a rehabilitation tool.

1.2. Knowing and interpreting the world through the body

The fact that movement gives us an invaluable sense of our experiences is well acknowledged, conceptualized and translated into practices by DMT (Cohen & Walco, 1999; Katz, 1985; Mendelsohn, 1999; Tortora, 2008). The relevance of the body in knowing and exploring the world, which plays a relevant role in human development, may have a significant meaning when our body is affected by the experience of an illness or injury. During the course of an illness or treatment, people may experience pain, stress or discomfort which can lead to a sense of separation from the body and anger towards it. Patients can even feel betrayed by their own bodies (Jill; Sonke-Henderson & Brandman, 2007).

Theories proposed by Piaget and lately supported by Ayers and Kephart claim that “we learn about the world and make sense of it through our bodies and movement” (Katz, 1985). These theories highlight the crucial role that the body plays not only in knowing and discovering the world but also in the very basic organization of the self and these are at the basis of MDMT practices.³ Dance movement

³ As we will see later, psychoanalysts such as Lacan and Françoise Dolto, have developed extended theories of the self in relation to the unconscious image of the body, Lacan through the famous Mirror Stage and Françoise Dolto through the concept of the Unconscious Image of the Body. J.C Nasio (NCCAM, 2012) in terms, proposes an understanding of the self, based on these constructions of the body and its perceptions.

therapists as well as other health related professionals have stressed the importance of providing services in a way that facilitate patients in assuming an active role in every stage of their lives. Doubtless, illnesses, as much as other living experiences, can challenge individuals with a difficult experience, particularly in relation to their bodies, their ability to move and the way they relate to others. In this scenario, learning a dance as a form of rehabilitation will aim to modify an active-passive equation facilitating the possibility of experiencing our bodies and the relation with ourselves and/or others in a more integrated and pleasurable way (Mendelsohn, 1999).

While illness or injury usually bring about discomfort, stress, pain, immobilization, isolation, invasiveness, conscious and unconscious fears, dance has the potential to make the body speak, express and be felt or experienced in a dissimilar way providing some comfort, relief, connectedness, harmony, strength, control, and an active role in connection with ourselves and the environment (Mendelsohn, 1999). *“The body exists as a container of human experience and it can also be reformulated”* (Arakawa & Davis, 1997). Dance may facilitate reintegration within the body and between the body and the environment. The particular nuances and subtleties of dance can be very useful and significant for a person who is coping with a disease which usually profoundly impacts on the body functions as well as the body image (Cohen & Walco, 1999).

Phenomenology and theory of perception

The conceptualization of giving meaning to the world through the body was rooted in phenomenology. For Merleau-Ponty, a French phenomenological

philosopher born at the beginning of the twentieth-century, the body is “my being-to-the-world”, the instrument by which all information and knowledge is received and meaning is generated (Grosz, 1994d, p. 87).” In Merleau-Ponty’s philosophy, the body plays an active role and it is through it that we relate to the environment, actively categorizing and grouping the experiences perceived through our bodily senses. Within his work, Merleau-Ponty even talks about the body as “my whole sensory being” highlighting the crucial role it has as the exclusive point of entry of sensory information (Merleau Ponty as in Grosz, 1994d, p. 99).

Based on some neurological disturbances, Merleau-Ponty was able to conceive important ideas for theories of perception and philosophy. Among them, perhaps the most relevant finding was the irreducibility of psychology to biology, and vice versa, which is immensely important for its critique of Cartesian paradigms. As other researchers, Merleau-Ponty was interested in neurological disturbances like agnosia and phantom limb. These disturbances, together with the famous Schneider’s case of aphasia, assisted him in understanding the sophisticated processes of perception and the role of the body in the construction of the world, showing precisely that the body does not strictly follow the paths of physiology but rather needs, for its normal functioning, a construction of meaning where the individual inscribes the sensory experiences and shapes them. It is precisely the double inscription shown in these disturbances that gives evidence to the irreducibility of biology or psychology when thinking about the body and its normal functioning. In this double inscription mere bodily presence and absence do not follow the patterns of simple materiality (Grosz, 1994c). For example, recent studies in neurocognition using simulation to correct

sensations of phantom limb show the relevance and actuality of Merleau's Ponty inputs. The experiment reported by Ramachandran, the "Pinocchio illusion" and a broad range of experimental investigation may support the idea that the ability to plan ahead and to imagine, closely related to perception, is a fundamental characteristic of cognitive systems and essential to movement (Cruse & Schilling, 2010).

In the Pinocchio illusion a person is holding his nose between the index finger and the thumb while an experimenter produces the mechanical stimulation of the bicep muscle. As a consequence, the person will have the subjective experience that his nose is "elongating" up to 30 cm. In the experiment reported by Ramachandran, a mirror is successfully used to fix the uncomfortable feelings of the phantom sensation. According to Cruse and Schilling's interpretation, the mirror acted by providing the patient's body model a new visual sensory input which stimulated the arm model to match the external stimulus (see Cruse & Schilling, 2010, pp. 69-70)

The phantom limb, the pain felt by an amputee person in the lost limb, indicates the presence of a part of the body that is no longer there. Agnosia, on the contrary, shows a different process since it does not allow the individual to recognize a part of the body that is materially there. While the first case indicates a memory of a past experience, the second one, as Grosz points out, signals a forgetfulness or refusal. The perception of the individual is not consistent with the exterior perception of the materiality of the body. In both cases, the body does not feel or act in terms of pure anatomy, but rather in the ways that the anatomy is understood or constructed by the subject through one's body image (Grosz, 1994c).

Relying on the evidence and knowledge extracted from these neurological disorders, Merleau-Ponty created a conception of the body that led him to criticize the passive role that philosophy and psychology have assumed for it. On the contrary, he granted the body a vital role: it is primarily and exclusively through our senses and the sensory inputs we receive through it that we perceive, interpret and give form to the world as well as to its objects.

For Merleau-Ponty the concepts of corporal schema and body image are also relevant. It is promptly by means of a body image that I can perform actions without reflecting on them and it is this body image that has a crucial role in establishing, constructing and reorganizing “the lived space and time of the subject” (Grosz, 1994d, p. 91). Moreover, the body image is the construction that allows the integration of the information provided by the senses, allowing the senses to understand “between themselves”, a process also called transposition of the senses or “kinesthetic intertranslation (Grosz, 1994d).

The concept of kinesthetic intertranslation presented by Merleau-Ponty is closely related to the emergent knowledge on sensory-motor-integration which has proved to be a very promising concept in the understanding of human cognition and behaviour. Previous studies in cognition have focused on the study of the functioning of individual senses (vision, touch, smell, etc). However, new approaches recognize the importance of understanding the functioning of the senses as they work in “real life” all together, at the same time and being integrated, assessed and interpreted by the person (Holmes & Spence, 2004; Vignemont, 2011). Later, I will return to the

concept of sensory-motor-integration since it lends support to understand the participants' experiences of the tango program.

Embodiment

In Merleau-Ponty's philosophical conception, the relation with our own body is different from the relation with the rest of the objects. One's own body is the way we relate with other objects, a point of entry or access to the rest of the world. Since it can never be thought of or perceived from an outside perspective --a mind cannot exist without a corporal body-- humans will always have a different relation to their own bodies than the one they have to any other objects. The body will never be an object by itself because I will never have "the distance, the perspective" to think or reflect about it. The fact that there is no mind outside the body and that any perception from the world will be coming through it gives the body a different entity from that of the other objects. This conception provides basis to the concept of embodiment and allows thinking about the idea of "embodied experiences (Grosz, 1994d)."

George Lakoff and his collaborators will later claim that all human cognition, even the-most abstract one, has its roots in what he calls "low-level" of body functioning, either body sensations, body neural system or simple emotions. They will even speak about "the cognitive unconscious" to refer to "any mental operation and structures that are involved in language, meaning, perception, conceptual systems and reasons" (Lakoff & Johnson, 1999). They based this rationale on the fact that all of our conceptual systems, as well as our ability to reason, emerge from our bodies and that includes our sensorimotor system.

Body as a text

Although keeping important differences, authors such as Guatary, Deleuse, Freud, Nietzsche, Foucault and Lingis have developed the idea of the body as a text, a surface, constantly inscribed by social practices, norms, values and discourses (Grosz, 1994a). As a surface, it can be inscribed and re-inscribed not only by these mentioned social constructions but also through their instruments. Being dance and medicine two disciplines that work with the body, it is interesting to reflect on the particular practices, discourses and instruments that each of them utilizes.

Although the exploration of the differences exceeds the context of this thesis, it is noteworthy to ascertain on what the discourses, practices and values of arts - particularly an art associated with the body- can bring to the lives of the people who are experiencing an illness. Although the bodies are always “spoken” by medical discourses, their impacts can even be more significant during the experience of an illness and can differentially affect the healing process. The role of the others speaking, inscribing and connecting with the body may gain a valuable role in re-inscribing, somehow, a discourse based on pleasure, expression and communication. Even the instruments each discipline uses can be representative of these multiple, though always subjective, possible impacts. While dance uses music, movement, gestures, dynamics, space, one’s and others’ bodies to express and to communicate, medicine uses machines, esthetoscopies, drugs, explorative touch, scalpels, and questionings, when approaching the body. Interestingly, following Foucault, Grosz reserves for the body and for pleasure a particular position identifying them as the “raw material” where power inscribes; almost as the places where the inscriptions of

power are articulated. But also, as the place of resistance, Foucault remarks that while each institution utilizes its own procedures and techniques and makes its own use of power, there are also “the resistant bodies and the pleasures of individuals” (Grosz, 1994a, p. 155)

‘Bodies and pleasures’ are the objects and targets of power; in a sense, Foucault seems to imply that they preexist power, that they are or may be the raw materials on which power works and the sites for possible resistance to the particular forms power takes” (Grosz, 1994a, p. 155)

Body schema and body image

Body image and body schema have been and are sometimes used interchangeably however, and occasionally, in the wrong way, as their separation is not so neat. Moreover, they are both present in different psychological, neurological and physiological phenomena concerning (i) the organization of body sensations, (ii) the perception of one’s position in space, and (iii) our body parts and the representation of the body as provided by all the senses. Depending on the discipline, the academic school or the illness that is being considered, we may have different definitions of each of these concepts. In fact, the authors that developed and worked on these notions have presented different definitions throughout their own work (Grosz, 1994c). Perspectives in body awareness rooted in phenomenological and other traditions reflect the fact that, up to a certain extent, hundreds of representations of body image can be claimed. This multiplication of representations of the body, they say, put the concept of body image at risk and under important critique (Vignemont, 2011). Some authors, in fact, currently propose to speak about

overlapping maps of the body instead of body image or body schema, which I consider very useful to reflect about the desired outcomes of proposed intervention (Holmes & Spence, 2004).

Generally speaking, we can see that body schema refers more to the ways in which we perceive our posture, the spatial localization of the body, its movements and its spatial relation with other bodies, whereas body image has kept a more visual and emotional status. This status generally implies the visual representation the individual has of him/ herself. J. Nasio states that these two images are complementary and interactive and are both relevant aspects or part of our sense of self: the image reflected in the mirror and one more difficult to recognize because it is not visual, the mental representation of our sensorial and physical impressions (Nasio, 2008b, p. 12).

I would like to highlight that both terms, body schema and body image, are used by several disciplines when body action and movement are involved. Body schema and body image are used in most disciplines that require an extensive knowledge of how we coordinate or integrate sensory motor information. They are also useful to understand how we learn to perform new movements and which problems we encounter to succeed in these actions. It is also used by disciplines that treat problems of the self and the body such as medicine, psychology, occupational therapy, sports medicine, and sport psychology (Vignemont, 2011).

History and relevance of the concept of body image for rehabilitation

Although Grosz (1994c) traces the first references to the concept of body image in Western medicine back to the sixteenth century with the idea of

mortification introduced by physician and surgeon Ambroise Paré, she points out that some anticipations of this concept can already be inferred from the word *Ka*. This word, used in ancient Egypt and meaning an ethereal copy of the body represents a kind of “soul-like-double” of the body, less dense and invisible, but still keeping some materiality (Grosz, 1994c, p. 62).

Pare, a physician and surgeon who primarily worked within the field of war injuries, thus with amputees, introduced the concept of mortification. By mortification, he understood a phenomenon whereby the body could feel and act with reference to a force that did not exist anymore, calling this a phantom sensation. The recognition and study of these sensations caused by the lost limb became central in the future development of the concept of body image and other related concepts (Grosz, 1994c).

It was S. Weir Mitchell, during the nineteenth century, who actually introduced the concept of phantom limb. Weir Mitchell found that the mortification sensation of the phantom limb presented by Pare could be *changed and modified by experimentation* (Grosz, 1994c). That idea opened a wide range of controlled experiments in relation to future disruptions to body image and motor functioning (Cruse & Schilling, 2010; Grosz, 1994c; Malouin et al., 2009).

Later on, Henry Head introduced the concept of “postural schema” or “postural model of ourselves.” He presented a more technical notion of body image suggesting that normal people would have a postural recognition based on the coordination of multiple sensory impulses. Even more interesting, he argued that this multiple coordination should be explained by both psychological and neurological

knowledge. Head's postural model of the body is a three-dimensional image that emerges as the result of the information provided by the senses through the body. This postural model is composed by the information about the subject's body, its location in space and its relation to other objects (Grosz, 1994c; Vignemont, 2011).

Head identifies a very important feature of this body scheme, which, as we will see later on, can be considered as the basis of a rehabilitation program: *its plasticity*. The body schema, as he presents it, is able to register the sensations that are taking place in the present at the same time that it keeps a register of the past impressions (Grosz, 1994c).

In addition, Head already granted the body schema the *possibility of projection*. The body schema allows us the capability of recognition and appreciation of position and movement beyond the limits of our own bodies. "Any object that participates in the conscious movement of our own bodies is added to the model of ourselves and becomes part of these schemata: a woman's power of localization may extend to the feather in her hat (Head and Holmes as in Grosz, 1994c, p. 66)." Based on his concept of body schema and its complex functioning, current research attempted to understand how we organize the information about the different parts of our body in relation to space and movement; particularly when different sensory inputs are available (Jola, 2010).

Emotional component. Intersubjective information

Strongly influenced by Head's notion of body schema, Schilder presents a conception of body image which relies less on neurophysiological data and more on psychological processes. Indeed, this concept of body image appears later in Freud's

work about narcissism and libidinal drives (Grosz, 1994c, p. 67). The psychological aspects that Schilder considers allows him to conceive a model where social and interpersonal attachments play a significant role in the formation of self-image and the conception of the body. In fact, he structures his book “Imagen y Apariencia del Cuerpo Humano” in three sections: (i) “the physiological base of the corporal image,” (ii) “the libidinal structure of the body image,” (iii) “Sociology of body image” (Schilder, 1958a, p. 9 "my translation")

For Schilder (1958a), an individual experiments different body sensations which all participate in the creation of his body image. Thus, this image that provides information about the external world also includes significant emotional components. The state of lack of maturity in which humans are born fosters a great amount of social and communicational contact with others. Hence, since all contacts with the environment are first mediated by others, who in turn have their own relationship with their bodies and the subject's body, the information about the individual's body and movement capacities will always be intersubjective information. Schilder claims that human beings are able to understand the action of others particularly as expressed by movement. In fact, the perception of the body of others, together with its emotion is fundamental for the perception of our own body (Schilder, 1958a). So, for Schilder our perceptions are always social.

Grosz interprets Schilder's work as a signal of what Freud will later call “somatic compliance” which is “the organic body's amenability to psychical takeover” (Grosz, 1994c, p. 68). In the psychoanalytic literature, this compliance is supported in during infancy, when we need others' close care in order to develop,

grow up and become a subject. As proposed by Nasio, the role played by others in the body image indicates that it will be not only the result of the child's own body sensations but also the result of the ways in which the child's body has functioned for others. In close and intense contact with other human beings, which are, in turn, part of a cultural background, the child's body will work as a 'screen' where primary figures and significant ones project their desires, fears, disappointments, hopes and ambitions (Nasio, 2008a).

Plasticity and therapeutic interventions

Besides the particular and significant marks that childhood experiences have inscribed through specific body sensations and the ways in which significant others have contributed to form and interpret them, the process of production and transformation of the body image is constant and does not stop (Nasio, 2008b; Schilder, 1958a) This continuous transformation, or plastic capacity, is at the base of any therapeutic intervention concerning problems or situations that can positively be modified, altered or improved through changes in the body image or scheme. In this sense, not only will primary figures (e.g., parents) be important or relevant in the formation and constitution of the body image but also future significant others will be able to model or leave an imprint on it (Fischman, 2008; Metsios et al., 2008)

Body image and illness

The body image may suffer major modifications when people face different organic or psychological disorders. These modifications or alterations can sometimes be captured through self-image drawing tests, represented by enlarged areas of

certain parts of the body, and the decrease or increase of space in the paper and in body details (Horwitz, Kowalski, & Anderberg, 2010).

The literature presented above supports the idea that diseases produce sensations at the level of the affected organs, in turn modifying one's constantly changing body image. Those changes in the body image will have a psychological and attitudinal impact on the individual's life (Lyons, 2006). As Grosz argues, the physical and libidinal changes that modify the body can also be affected by modifications in body image, meaning that the physical or psychological body and the body image are strongly independent and, changes in one may create effects on the other (Grosz, 1994c).

This notion is undoubtedly at the base of dance therapy and was graciously shown in the "motion-emotion" refrain or adage. This adagio portrays the idea that body movement reflects emotional states and that changes in movement behavior can lead to changes in the psyche. This notion is consistent with the mind-body connection and the interactive nature of cortical function presented by Berrol in the neurophysiologic principles of DMT (Cynthia Berrol, 1992). Body image plays a role as a mediating position between the physical and psychological aspects, and this notion can be used with therapeutic purposes for different organic diseases. As stated by Grosz:

"Psychical or narcissistic investments in organs, bodily areas or activities are also registered on the body image and may, depending on the general health of the subject, provoke irritation at the organic level, thus causing organic transformations. Both psychical and organic experiences are amenable to changes affected on the

other” (Grosz, 1994c, p. 79). Therefore, a selected activity through a rehabilitation plan can produce an adequate investment in the body organs, and body zones may hopefully modify body conditions and sensations. The goal of such a therapeutic intervention will be to provoke a distressing, soothing, reassuring and narcissist body experience that causes a positive impact on body image.

Instrumental and social extensions of the body

“The body image is as much a function of the subject’s psychology and socio-historical context as of anatomy” (Grosz, 1994c, p. 79). As stated above, the body image has a significant degree of plasticity along with a strongly remarkable fluid and dynamic capacity. This capacity is linked to its interpersonal nature as well as its ability of being extended by the use of elements or objects. Our bodies may perceive the world beyond their own limits. We can perceive the world and feel it, through objects functioning as sensitive extensions. The objects that have this capacity and the information provided through them can modify the body image. In certain cases, these objects can even become part of our body scheme (Schilder, 1958a). While discussing social relations and body image, Schilder incorporates the topic of the body distance and he argues that when the distance between two bodies decreases the likelihood of impacting in the reconstruction of that body image augments. This distance, he states, starts as a matter of vision and ends up in the realm of touch. In addition, he argues, any emotion concerning the other person places his body image closer to ours (Schilder, 1958b).

The thesis supports the idea that the sensations emerging from the body are always mediated by personal interpretations. Interpersonal and socio-historical

contexts make the limits of body image and its borders permeable. This permeability, in turn, gives the body image the power of incorporating and expelling, leading Grosz to point out its “osmotic” nature (Grosz, 1994d). This capability extends to different areas: spatiality, objects, and instruments. The space surrounding the individual becomes crucial in shaping the body image, including the social space.

Body awareness, multisensory integration and peripersonal space

Due to the importance that body awareness has in MDMT and the relevance that patients have placed on the experience of dancing in close contact with other people, I will now present some ideas of this concept as well as its relation with new “representations of the body”, multisensory integration and peripersonal space. Body awareness, understood as the ability of human beings to recognize and feel movements and feelings of the body, did not have a central role in philosophy except from phenomenology and only recently from neuro-cognitivism (Vignemont, 2011). However, it has been a central concept in MDMT. One of its main topics of studies is understanding the relationships between action, space and self, and raising questions about how we get to perceive our own body movements and how that affects the notion of our selves. Sometimes, we refer to body awareness as the reflection or the knowledge that we have from our bodies from “inside-in” and, although we always have a certain idea of how our body feels, this perception is usually weak, with the exception of moments of pain or motor learning (Grosz, 1994d; Vignemont, 2011).

Body awareness contends the perception of our bodies through what are usually called internal and external senses including: touch, proprioception (position and movement of the body), nociception (responses to dangerous mechanical stimuli),

vestibular system (balance), and interoception (status of physiological conditions such as skin, muscles, and cardiovascular system). At the cortical level most of these signals are processed by the primary and somatosensory cortex (Vignemont, 2011).

Most literature reflects on two types of bodily-awareness; a representational approach -anchored in a mental representation of the body and an analytic philosophy-, and a sensorimotor approach -anchored in the interaction of the body with the world and in a phenomenological tradition. Based on the analysis of the literature review it can be said that there are several representations of the body, several forms of grouping or conceiving them which led philosophers to take two very different and opposing positions: being totally skeptical of its use, or creating a very comprehensive list of the different types of body representations and ways of grouping them. As an example, we can name one grouping based on its format composed by: “a sensorimotor body representation (also called body schema), visuospatial body representation (also called body structural description) and conceptual body representation (also called body semantics).” Other criteria are: “availability to consciousness (unconscious versus conscious), dynamics (short-term versus long-term), functional role (for action versus for perception) and format (sensorimotor, visuospatial and conceptual).” These are only examples since the multiplication of representations allows its categorization under different criteria (Vignemont, 2011, p. 16)

The lived body and the role of action. The sensorimotor approach

On the other hand, the sensorimotor approach, supported by phenomenologists, always concerned to give too much attention to the mind, will

claim for the lived body a central role placing *action* at the centre of body awareness. This position mainly supported by Merleau-Ponty in *Phenomenology of Perceptions* is synthesized as follows (Vignemont, 2011, p. 17):

The sensorimotor view can be articulated into three related claims: (i) the body is not an object that can be represented; (ii) the presence of the body is the presence of the body in the world, and (iii) the body we experience is the body in action. By positioning action at the core of bodily awareness, Merleau-Ponty initiated a long tradition of phenomenological investigation of bodily awareness, as well as the recent sensorimotor theories of consciousness (Vignemont, 2011, p. 17).

The body schema is then understood not as a representation but as a *sensorymotor function* since it is through the actions of the body that we get to know the world even if these actions remain later as virtual movements.

The action needs not be performed, but can remain virtual movements, what Siewert (2005) calls bodily know-how (i.e. practical knowledge of how to act with or towards a part of one's body). In Merleau-Ponty's words, the lived body consists in an "I can" (Vignemont, 2011, p. 18).

Peripersonal space

This new cognitive concept can be already anticipated or inferred from several authors -as presented above- that have worked on the notions of body schema when speaking about their projection capacity. Particularly, Schriller (1958a) has noted the projection ability of the body image and the role that close distance poses in regard to its plasticity capacity.

In this new scenario, the closest body's surroundings (generally understood as the distance that can be covered by our limbs) have become an area of interest in neuro-cognition. Called peripersonal space, this closest and significant area was found to be subject of particular ways of perception and behaviour both in animals and humans. This spacial area was also conceived as a "grey zone" (Vignemont, 2011, p. 29) since it shares characteristics of internal and external space" in other words: not purely bodily, and not purely external. It is considered a fight or defensive area and produces particular responses. It is also possible that it triggers safety or protective responses and it seems very similar to the transitional space proposed by Donald Winnicott having important emotional meanings in the constitution of the subjectivity (Wengrower, 2008).

For the purpose of this study I want to shed light on the importance of multi-sensory-information and peripersonal space in body awareness. Dancing involves constant awareness about movement, action and proprioception. Tango and other partner dances include haptic and imitation components which may bring a multi-sensory dimension that may positively affect the process of body awareness and modifications in the representations of the body.

1.3. Tango as an Enjoyable Activity. The Relevance of Flow in Motivation

I will now analyze the concept of flow as presented by human motivation theories aimed at explaining the high adherence reported in tango cohorts. This thesis will support that tango, when experienced as a pleasurable and enjoyable activity, is strongly connected with intrinsic motivation, autonomy and meaning, which can explain the extended benefits reported by the tango participants.

The fact that tango cohorts experienced low rates of dropouts and that people participating in these cohorts wanted to continue after the termination of the program is relevant to the consideration of tango as an effective therapeutic option in comparison with other programs (M. E. Hackney & Earhart, 2009b, 2009c; M. E. Hackney & Earhart, 2010; Madeleine E.; Hackney et al., 2007; McKinley, 2008). The enthusiasm to finish the program together with the willingness to practice it for an extended period of time resulted in a better rate of “adherence” from a medical perspective. Therefore, it is worthwhile to identify why tango is considered a pleasurable activity and what the characteristics of a pleasurable activity are. All the interviewees in this research project reported both great “enjoyment and pleasure” linked to the tango program, they were ready to continue the program if offered, and described pleasure in addition to physical improvement as one of the main characteristics of this rehabilitation modality (M. Hackney & Earhart, 2010).

Enjoyment, motivation and flow

Theories about the source of human motivation differ from each other. Some theories locate these sources in one’s past, so they may look at drives, needs or learning already experienced by the individual and determining his or her choices (Reeve, 2005). Other motivation theories are focused on the future and stress the importance of setting goals to direct our actions. Csikszentmihalyi and Rathunde (1993) in contrast, focus on the present and recuperate the phenomenological experience of the individual whose motivation we are analyzing. In doing that, they center the attention on “what propels people to initiate or to continue an activity

because they enjoy its performance in the present” (p. 57). The reason for continuing the chosen activity is rooted in the person’s feelings while doing the actual activity, feelings that motivate to “continue doing what one is doing.” When the experience that the person is living meets this criterion, Csikszentmihalyi (1993) classifies it as an “intrinsically motivated” activity (p. 57).

The reason why Csikszentmihalyi calls it intrinsically motivated is because it is an activity rewarding in itself, done with the main purpose of being in “that zone”, in that “particular state” that he calls: *flow*. Had the experience lacked this component of providing enjoyment at the present time, the individual would likely stop doing it (Csikszentmihalyi & Rathunde, 1993).

Still, there is a distinction to be made between two different classes of intrinsically motivated actions: the ones that provide *pleasure* and those that provide *enjoyment*. The activities that provide *pleasure* are the ones that involve sensations coming from our nervous system, which is programmed to seek rewards such as food, sex or relaxation. In turn, the activities that provide *enjoyment* are the ones where “the positive sensations arise from the experience of holistic involvement that follows upon concentration and skilled performance” (Csikszentmihalyi & Rathunde, 1993, p. 58). Csikszentmihalyi reminds us that intrinsic and extrinsic motivation, pleasure and enjoyment, should not be necessarily thought of as mutually exclusive or rigorously diverse. In fact, they combine in multiple ways or are present in one activity at the same time. However, the distinction can be held with the purpose of understanding and analyzing the concepts better (Csikszentmihalyi, 1997; Csikszentmihalyi & Rathunde, 1993)

Flow studies

This mini-theory of flow, within the context of other human motivation theories, started as a students' group research project trying to understand why some people were ready to do, sometimes, very difficult or demanding activities in the absence of extrinsic rewards such as prizes, social recognition or others. Participants included in the research were rock climbers, chess players, athletes, and artists (Csikszentmihalyi, 1975, 1997; Csikszentmihalyi & Rathunde, 1993). After hundreds of very extensive interviews, researchers constantly found the same underlying condition: participants enjoyed doing the activity so much that they wanted to do it again and again. While doing the activity, they experienced what the researchers called "flow" based on the metaphor that most of (Csikszentmihalyi & Rathunde, 1993, p. 58) the participants, when trying to describe their feelings, mentioned "a current that carried them along" (Csikszentmihalyi & Rathunde, 1993).

After this first research project, in which more than 7,000 interviews about the flowing experience were collected and analyzed by researchers at the Medical School of the University of Milan, several others were carried out in Korea, Thailand, Australia, Japan in groups aged 7 to 87, always with the same results: participants described their most enjoyable experiences in very similar terms. What differed in these studies was the sources of the experience which could vary and be influenced by culture, gender, age, class and personal inclinations. Csikszentmihalyi, based on the participants' data, described the experience of having flow as "the subjective state that people report when they are completely involved in something to the point of

forgetting time, fatigue, and everything else but the activity itself” (Csikszentmihalyi & Rathunde, 1993, p. 59).

Several activities are reported as generally providing the optimal conditions for a flow experience. Hobbies mainly nucleate these activities, for example, practicing any kind of art or sport, collecting stamps, playing board games or reading an interesting book. They all allow us to forget time and to become deeply immersed into the activity (Csikszentmihalyi & Rathunde, 1993)

Optimal characteristics for a flow experience

Csikszentmihalyi presents five characteristics that are optimal to facilitate or create a flowing experience (Csikszentmihalyi, 1997; Csikszentmihalyi & Rathunde, 1993):

1) A clear set of goals which facilitate an immediate and non-vague feedback about how we are doing the task. While in sports and games, it is easy to have short-term feedback about how we are doing; in daily activities, this feedback requires a longer time frame. As an example, we can compare scores obtained while playing a game with the feedback we receive in one’s job. The first one is usually very clear and fast to obtain while the second one can require more time and has less structured references.

2) In order to have a sense of flow, a balance between the demands and the skills is necessary. The ideal situation is an activity with a relatively high degree of challenge and a matching degree of skill. If the challenges are very high in relation to the skills, the activity will create a degree of anxiety, whereas if the challenges are not enough for the individual, it will create a sense of boredom. When the challenge

and the skills are fairly balanced, all the concentration is required by the task and the person will enter this state of flow.

3) Whenever this balance exists, the person centers himself/ herself in the present time and loses a sense of self-awareness because the task demands all the skills and requires a degree of concentration that does not allow the individual to think of herself or himself while executing the activity. This is very important since rumination about the past and future is very common for most of us and it drains a lot of psychic energy. The loss of self consciousness experienced when finding flow has been explained by participants when listening to a melody as a “feeling of self-transcendence or feeling at one with the cosmos” (Csikszentmihalyi & Rathunde, 1993, p. 60). Dancers reported having the same sensation when feeling their bodies moving at the same rhythm as others. While self-awareness should be lost at the moment of performing the activity since most of the psychic energy goes to the concentration on the task, self-efficacy can increase afterwards, when the individual thinks about the activity and the achieved goals or gratifying challenging experience (Csikszentmihalyi & Rathunde, 1993).

4) The concentration on the task at hand also creates a “distorted perception of time.” When doing a pleasurable activity, we usually feel that time does not pass at the same speed as it normally does, so there is an altered sense of time, generally experienced as time passing faster.

5) When all the above conditions are present, the person wants to repeat the action, to recreate the same conditions and have the same feeling over and over again just for the sake of it and without looking for any other reward. For this reason,

Csikszentmihalyi calls it an “autotelic experience, or worth doing for its own sake” (1993, p. 60).

Balance between skills and challenge

Even though the balance between skills and challenge has been described as the best general condition to produce an experience of flow, a thorough analysis that combines skills, activities, challenges, populations’ age and cultural groups provides more evidence about the feelings experienced while doing different activities that can potentially produce flow. These feelings range from arousal (high challenge, moderate skill), flow (high challenge, high skill), control (moderate challenge, high skill), boredom (low challenge, high skill) relaxation (low challenge, moderate skill), apathy (low challenge, low skill), worry (moderate challenge, low skill) to anxiety (high challenge, low skill) (Csikszentmihalyi, 1997; Csikszentmihalyi & Rathunde, 1993).

To have these combinations in mind can provide a good basis for determining the amount of challenge that should be presented in a therapeutic tango program, how to adapt the classes to the needs of the participants in order to promote this sense of learning in an optimal balanced level of challenge, novelty and achievement. This balance should be achieved in a way that creates the conditions needed for experiencing flow while addressing the physical expected outcomes. All the characteristics described for activities that usually produce a sense of flow can be hypothesized to be underlying the findings of the tango for people with PD. In particular, the enjoyment that resulted from the tango programs and the novelty of learning and mastering a new skill can be better analyzed through the concept of flow

that we have just presented (Duncan & Earhart, 2012; M. H. G. Earhart, 2009; M. Hackney & Earhart, 2010; M. E. Hackney & Earhart, 2009c; Hackney & Earhart, 2010; McKinley, 2008).

Autonomy and Intrinsic Motivation

Autonomy and intrinsic motivation are central concepts to “adherence”, since they are theorized to be crucial aspects that foster motivation and increase people’s desire to follow a treatment or to adopt self-care strategies.

Studies in the area of health care and therapy focused on the importance of autonomy in health care outcomes. From this perspective professionals that hold a supportive autonomous attitude can prompt better program involvement (Deci, 1996). The relationship between the pleasure found in the experience of flow as the main reward for doing an activity and the intrinsic motivation as the highest form of autonomy can lead to suggest that any activity that can encompass this kind of pleasurable component can be privileged (or at least evaluated, offered or suggested) over others (Deci, 1996; Ryan & Deci, 2001).

Interventions such as tango and therapeutic dance should be supported more as self-care strategies than as “prescribed” ones even when, due to their therapeutic value, they will be promoted or encouraged by health care professionals. Following Self determination theory as researched by Deci, we can say that being autonomy supportive is crucial when promoting mind / body therapies based on whole person care paradigms.

THE VALUE OF DANCE

The first part was dedicated to the presentation of theoretical frameworks to understand the use of dance as a rehabilitation tool. I will now present a literature review with outcomes supporting the rationale presented before and the value of dance as a rehabilitation tool. The presentation is organized as a function of five salient components of dance that make it so suitable for therapeutic purposes.

I will now present five particular aspects of dance that make it suitable as a tool for rehabilitation. I will formulate dance as: 1) a form of exercise, 2) an inherently fun activity 3) intimately related to music and rhythm, 4) a social activity, and 5) presenting additional benefits, over other forms of rehabilitation. All these characteristics have been linked to physiological, psychological, emotional, behavioral and cognitive benefits and seem to impact on other health related categories pursued in most therapeutic programs positively. They have been studied in the last decades providing a sound background to explore the use of tango as a feasible option for mobility related problems in PD.

Dance is a Valid Form of Exercise. Physiological Benefits of Dance

Dance is a validated form of exercise. Exercise has been identified as one of the most significant behavioural interventions that can affect and modify the course of different diseases and medical conditions in a positive way (Metsios et al., 2008). It is also extremely beneficial and recommended to maintain a healthy lifestyle (Arakawa & Davis, 1997).

Since dance can take many forms and can be offered in a wide variety of settings, intensities and levels, we can assert that a modified dance program may

include necessary amounts of exercise or physical activity. In this sense, dance can be a good and appropriate source of movement, exercise and physical training required in many rehabilitation programs (Keogh et al., 2009).

Dance has shown proven benefits in improving balance, reducing muscle tension, increasing muscle strength, functional mobility, range of mobility and flexibility all characteristics which seriously affect population with PD (Duncan & Earhart, 2012; M. E. Hackney & Earhart, 2009a, 2009c; Hackney & Earhart, 2010; Madeleine E.; Hackney et al., 2007; Hackney et al., 2007; Jones & Houston, 2011; McKinley, 2008). Improvements in range of motion, muscle strength and flexibility have also been reported by (Keogh et al., 2009; Van Deusen & Harlowe, 1987). Practiced in an appropriate form or intensity, it can also provide adequate levels for cardiovascular endurance (Belardinelli et al., 2008).

Dance appears to be particularly appropriate for balance, a central problem in PD and aging population, due to the continue shift required by transferring the weight in an upright position from one foot to the other with different degrees of difficulty such as pivots, rotation of the body, speed of transfer (Metsios et al., 2008). Verghese (2006) reports the benefits in balance and gait for older social dancers when compared with older non-social dancers suggesting that dancing can be a good intervention capable of providing long term benefits to avoid falls and other risks associated with the loss of balance and shortening of gait. Studies using modified jazz dance sessions for elderly people found important changes in the participants' balance, suggesting it as an appropriate tool to prevent falls (Alpert et al., 2009).

In a recent 12-month community-based study for people with PD (Duncan & Earhart, 2012), tango dancing proved to be effective in enhancing measures of physical function, suggesting that long-term participation in the tango program may modify the progression of disability. The study demonstrated improvements in balance, gait and upper extremity function when comparing the tango cohort to the non- intervention or control group (Duncan & Earhart, 2012). Furthermore, the outcomes showed that benefits could be more far-reaching than what has been previously noticed in shorter-term studies. This scenario suggests that tango dancing may not only be effective for balance and gait but also for bradykinesia and rigidity, supporting the idea that tango may have a broader impact on motor symptom progression (Duncan & Earhart, 2012). This study, as well as other controlled studies conducted in the past for people with PD, showed physical improvements that have been clinically meaningful (Hackney & Earhart, 2009b)

Improvements in cardiovascular endurance were reported in programs using aerobic dance. This type of dancing proved to be a good strategy to increase CVE particularly when it was taught by an enthusiastic instructor using appealing music (Cluphf, O'Connor, & Vanin, 2001). As we will see later based on participant's reports, the characteristics of the instructor play a significant role for participants.

Besides being a validated form of physical activity with the consequent physiological benefits, dance is a proved movement activity with positive effects on emotions, mood and cognitive functions. While exercise encourages people to discover and explore their physical abilities, a proper amount of exercise vitalizes and awakens the brain functions (Arakawa & Davis, 1997).

In addition, the inclusion of thorough cognitive strategies used to explain movement may be extremely important to regain body and movement awareness and can lead to consider dancing as an important non-pharmacological approach for elderly participants (Hernandez, Cohelo, Gobbi, & Stella, 2010; McKinley, 2008). The importance of cognitive strategies will be developed in following sections, since it is a recurrent topic in the interviews conducted for this current thesis.

Dance is an Inherently Fun Activity. Benefits in Adherence and Continuity

Dance is an inherently fun activity and as such, it promotes and enhances adherence and continuity. Even though physical activity plays such a crucial role in relation to health, most of the population does not meet the necessary requirements of physical activity, a problem aggravated in elderly and other vulnerable populations such as the chronically ill, people with mental health difficulties, the injured and others. This lack of participation unveiled and triggered the need to include new forms of activities. In this context, dance reveals itself as a different form of exercise that seems to be a feasible and pleasant option for various populations (Merron, 2010). Interestingly, the major benefits in enrolling in a new physical activity were found for people who have a sedentary life and start doing some kind of exercise (Metsios et al., 2008).

Following the recommendation from the Centre of Disease Control and Prevention and the American College of Sports Medicine, we should consider three crucial aspects concerning physical activity which can be also extended to rehabilitation programs, particularly those needed to be sustained in time; (i) there is a difference between physical activity, exercise and physical fitness and, becoming

physically active may be the first goal to achieve for the whole population. In this context, physical activity is defined as “any bodily movement produced by skeletal muscles that translates in expenditure of energy” (Pate, 1995, p. 402), (ii) providers of health services must find ways to promote different kinds of physical activity and, (iii) it is important to provide effective ways for people not only to become more active but to stay and remain active along the years (Pate, 1995).

In relation to this third statement, a major problem with physical exercise is drop-outs. No more than 50% of middle age or older adults who enrolls in a therapeutic program is still enrolled after 6 months (Perlman et al., 1990). Lack of enthusiasm is a major cause of failing to complete a training program in cardiovascular rehabilitation (Belardinelli et al., 2008).

Dancing, on the contrary, has proved to have better adherence than other forms of exercise in all age groups. Research conducted with different populations obtained a significant high level of adherence in the experimental groups. The results repeat themselves in this regard; people enrolled in dance programs are willing to go up to the end and usually don't drop out (Moffet, Noreau, Parent, & Drolet, 2000; Noreau et al., 1997)

Duncan and Earhart (2012) found higher attendance in the people who completed a tango program tailored for people with PD and they interpreted it as the result of the satisfaction participants have with dance classes (2012). However, this study had a high rate of attrition, but this result can be linked to a high demanding level of participation since it was a 12 month-duration program with a twice per week attendance. In addition, since the program was the first one to use measures in off-

medication state, which can bring certain levels of discomfort to patients, it is very feasible that drop off rates have been linked to that requirement. Most participants who dropped out did it for non-related medical conditions. After completion of the tango intervention and based on general outcomes, researchers concluded that dancing was a socially engaging and enjoyable skill-based exercise that benefited people with PD (Duncan & Earhart, 2012).

Several authors highlight the value of dance as an inherently fun activity and the crucial role it played in rehabilitation programs (Alpert et al., 2009). Palo-Bengtsson and Ekman (2002) remarked the joy and enjoyment that participants with dementia repeatedly showed during the modified dance sessions they participated in. Other studies also identified the expressive and pleasurable elements of dancing as an advantage when compared with other forms of exercise in rehabilitation (Alpert et al., 2009; Keogh et al., 2009; McKinley, 2008; Palo-Bengtsson & Ekman, 2002; Van Deusen & Harlowe, 1987).

“Dance for Health” was a program designed to provide an enjoyable school-based aerobic exercise program for low-income African American and Hispanic adolescents. In this program, students were invited to make suggestions for music. Routines were fun, followed by all students and appealing to this age group. All students were able to succeed in the activity (Flores, 1995).

Working with a different population, Cluphf (2001) showed the benefits of dancing for intellectual disabled people who usually do not have enough opportunities to engage in self-initiated exercise activities. For this group, the combination of dance, an enthusiastic instructor and music played a central role in

enjoyment and engagement. The staff reported that participants were looking forward to the sessions and participated in them enthusiastically. That was confirmed by the fact that no participant dropped out along with perfect attendance to the program.

Haboush's focus on ballroom dances stresses the importance of choices for music styles and partnership. In effect, ballroom uses a variety of music that can be adapted to the client's preferences and familiarity. Since ballroom is a partnered dance, it provides the opportunity for being more connected, having a more personal experience and physical contact, all circumstances that facilitate social interactions. The social nature of dancing also helps dancers be more involved in the activity (Haboush et al., 2006).

Brown also considers the fact that our capacity for rhythm may have a connection with enjoyment. The fact that we tap our feet, we rock or sway in an unconscious way may be related to a human capacity for entrainment (Brown & Parsons, 2008).

Palo-Bengtsson identifies a particular emotional reaction that takes place as a response to the engaged body. In his research on people with dementia, he found that, while dancing, participants seemed to forget their frail condition and minimal fitness levels. They showed joy and happiness. In this regard, dancing can be considered an emotion-oriented approach which provides a possibility for non-verbal expression (Palo-Bengtsson & Ekman, 2002). Other authors also bring our attention to the fact that dancing produces a release of endorphins which, in turn, causes a sense of well-being (Aktas & Ogce, 2005).

Dance is intimately related to music and rhythm. Significance of use of music and rhythm in rehabilitation programs

Dance is intimately related to music and rhythm, basic components of dancing but not necessarily of movement. Music and rhythm play a relevant role in human behaviour and emotions and have the potential to affect the mind and the body. Using brain scanners researchers are trying to understand the fascinating relationships between music, rhythm and human behaviour, although most of them are still in a conjectural more than conclusive stage. This has significant implications for dance as therapy or rehabilitation.

Conducted by Dr. Zatorre, a group of researchers at McGill University found that listening to pleasant music activates almost the same brain areas as the ones activated by the emotional mechanisms linked to rewarding and pleasure (Salimpoor, Benovoy, Longo, Cooperstock, & Zatorre, 2009). This pattern is even encountered in rats. In a study conducted in 2009, this group of researchers was able to demonstrate a link between listening to pleasant music and an increase in emotional arousal. They also remark the fact that, unlike other pleasurable activities, listening to music does not have any functional demonstrated biological value and yet it is amongst the most rewarding experiences for human beings. Moreover, it has most likely the potential to modify emotions which is reported as the top reason why people listen to music (Salimpoor et al., 2009).

In a very similar venue, Hu highlighted the existence of “cue” neuron cells. These cells only respond to rewarding music or pleasant auditory tunes and not to neutral ones (defined by subjective preferences). Hu believed that the response of this

cue cells which “fired as crazy” is responsible for the release of chemicals. He studied this mechanism in patients with Parkinson’s disease and found that this chemical activation helped them recover some control over their movements temporarily. Presumably, the medial geniculate nucleus, a sub-cortical structure, is only activated when a synchronization of auditory stimulus and movement occurs. Either the auditory stimulus or the movement alone will not activate this structure (Davis, 2011; de Bruin et al., 2010).

In another stream of analysis, Berrol (1992) also finds that movement performed on certain music and rhythm has benefits on health. In effect, movements that are built on particular rhythms may help ease muscular rigidity and diminish levels of anxiety. These mechanisms will produce a sense of wellbeing, positive thinking and hope (Katz, 1985). In Berrol’s words: “*Inherently linked to sensory modalities, rhythm and movement directly stimulate basic receptor channels, i.e. kinaesthetic, proprioceptive, tactile, vestibular, auditory and visual*” (C. Berrol, 1990, p. 259).

Human beings have a remarkable capacity to respond to rhythm. Apparently, this capacity is an evolutionary novelty among humans based on the brain expansion of the cerebral cortex. Brown indicates that, the fact that we tap our feet, rock or sway in an unconscious way may also be related to a human capacity for entertainment (Brown & Parsons, 2008).

As highlighted by Earhart, tango is an activity executed to music, a relevant element addressing key components for Parkinson rehabilitation. Following the important recommendation of exercise to combat PD disabilities, four key areas of

components have been identified: (i) use of cueing strategies, (ii) use of cognitive movement strategies, (iii) movements that improve balance and (iv) training to improve physical capacity (Duncan & Earhart, 2012; Earhart, 2009; Hackney & Earhart, 2010). Music, a pivotal component of dance, targets the first key component, serving as an external cue which facilitates the initiation and continuity of movement (Earhart, 2009)

As stated before, different styles of dancing bring about the possibility to strategically play with numerous types of music according to the needs and preferences of each population. Music and rhythm are important components of any dance program. In other words, the music that we can use in a modified dance program not only will bring the rhythmic to the activity but also all the emotions and meanings that melodies, lyrics and songs can produce.

Dance is a social activity. Benefits of dance and social bonds

Dance is also an inherently social activity. Whether practicing a solo, partnered or grouped style, participants will most likely do it in a group class sharing different aspects of the experience with other members and promoting social interaction (Earhart, 2009; Hackney & Earhart, 2010; Kreutz, 2008; McCutchen, 2006; Mills & Daniluk, 2002; Ravelin et al., 2006). Modified dance programs may also propose different kinds of partnerships and groupings required by the goals or spirit of the activity. In addition, the fact that people get to dance together, sometimes in an open or close embrace or involving different types of body contact, lowers barriers that can take much longer in a regular, non- body or verbal interactions. This may generate the pleasant feeling that accompanies being with others. The effects of

touching and holding should also be considered in relation to physical, emotional and other desired outcomes.

The combination of the above mentioned factors promote social interaction, strengthen the sense of belonging and community and may create strong bonds (Aktas & Ogce, 2005). In the particular case of elderly people, it also helps them maintain a good connection with participation in activities of daily living (Keogh et al., 2009).

Benefits of dance over other forms of rehabilitation

When compared to other forms of rehabilitation, we should also consider the following potential benefits: (i) the use of a dance based program in rehabilitation is usually perceived as a whole person care approach (ii) it is cost efficient (iii) it requires little or no equipment and even less expensive apparatus or devices (iv) it is a human activity and as such, it has no stigma and is regularly associated with positive past and present experiences. As a usual human activity, it involves actors, practices and discourses outside the medical system which I consider a crucial benefit over other forms of rehabilitation involving important ethical considerations.

Indeed, dancing has the potential to impact on the whole individual (Cohen & Walco, 1999). The American Dance Therapy Association defined DMT as the “psychotherapeutic use of movement as a process which furthers the emotional, cognitive, social and physical integration of the individual” (American Dance Movement Association, 2011). This should be measured under the philosophy and rationale supporting Whole Care Person Medicine.

Dance instruction does not require large amounts of equipment and it is pretty inexpensive (Cluphf et al., 2001). It can be performed in a variety of settings such as classrooms, community centres, hospitals, nursing homes, others (Keogh et al., 2009).

In addition, dance is a form of treatment that does not have a stigma (Haboush et al., 2006) and it is usually linked to previous positive experiences, particularly in elderly people. As a usual human behavior, it can be less threatening than other forms of physical activity (Berry, Cline, Berry, & Davis, 1992; Keogh et al., 2009). This positive impact, together with the fact that it is usually perceived as a fun activity, reflects on a better rate of adherence and continuity than other treatments or rehabilitation modalities (Earhart, 2009; Hackney & Earhart, 2009b; McKinley, 2008). Metsios (2008) highlighted that the singular combination of low physical demand and social interaction can also be very significant for adherence while the enormous variety of dance styles improves the chances of attracting different groups of people. As stated by Keogh (2009), investigation in various forms of exercises is needed since preferences vary enormously amongst people.

Dance has been linked to improvements in QoL. A very interesting question derives from the work of Hackney and Earhart (2009b) in their comparison of Tango, Tai Chi, Waltz/Foxtrot and non- intervention. In this study, Health Related Quality of Life (HRQoL) is measured using the PDQ-39 questionnaire. The hypothesis was that while PD reduces HRQoL, exercise may improve it. Willing to assess the difference between interventions, they recruited seventy-five persons with PD and assigned them to the previous mentioned controlled groups. Tango cohort significantly

improved on post-testing scores in mobility, social support and PDQ-39 while no significant changes in HRQoL were noted in any of the other interventions. They concluded that the helpfulness of tango in improving HRQoL may be connected with the fact that “tango addresses balance and gait deficits in the context of a social interaction that requires working closely with a partner (M. E. Hackney & Earhart, 2009b, p. 644).” Like other authors, they mention the multidimensional effects on self-assessment and the attractiveness that dance may have as a leisure activity and/or as an interesting break in everyday life of patients with PD.

2. Methods

2.1. Methodological and epistemological approach

This study was based on phenomenological and feminist theories perspectives on the body. Phenomenological theories were used to understand the meanings that learning to dance Argentinean tango had for people diagnosed with Parkinson Disease.

In asking for the very nature of a phenomenon, phenomenology facilitates the understanding of what this experience is about, what makes this experience what it is, and what is essential to it in relation with their rehabilitation processes (Patton, 2001). As a research method it seeks to study the essence and to understand the meaning of our daily experiences (van Manen, 1990) In this particular case then, it should bring light about how people affected by Parkinson's disease understand and organize their world through the experience of learning Argentinean tango, a form of partnered dance with rehabilitation purposes. Focus will be put in capturing and describing how participants in a tango group perceive, describe, judge and make sense of their experiences and the ways in which the embodied experience of dancing impacted their healing process.

Other methodologies I used in the study are feminist inquiry. While trying to keep the strength of inductive, naturalistic inquiry strategy by approaching the setting without predetermined hypotheses and by basing interpretation in the grounded data, a feminist perspective in bioethics was used as a conceptual framework for the interpretation of findings. A feminist perspective in bioethics presumes the importance of gender biases in the medical system, its ways of constructing theories

and practices. So, a question that will be kept in mind for this research is how the lens of gender has shaped and affected our understanding in healing, making some human activities invisible in their therapeutic characteristics or potentials (Patton, 2001)

2.2. Description of the Program

The intervention was implemented by the neurologists practicing in the Department of Abnormal Movements of the Ramos-Mejia Hospital, a large urban facility and University Centre in the city of Buenos Aires, Argentina that serves general population⁴. It consisted of 16 weekly 90-minute tango sessions. Two tango teachers, one female and one male -the former also specialized in bio-dance- conducted the classes always structured in the same fashion. During the first 15 minutes, the patients worked with the breathing, proprioception, and postural correction, followed by 15 minutes of relaxation techniques and breathing exercises. Then came 30 minutes of rhythmic movements while listening to tango-milonga music, and during the last 30 minutes the patients danced with their teachers.

The intervention was originally implemented by the Department to document if the Tango Program (TP) improved mobility. The following assessments were performed by a neurologist before and after the program: UPDRS III; Berg Balance Scale (BBS); 15-meter walk test (15-MWT): time, number of steps, gait speed; and PDQ39. (reference poster, appendix). To participate in the class patients had to score lower than IV in the H&Y scale.

⁴ Sector de Movimientos Anormales, Division Neurologia, Hospital J M Ramos Mejia, Centro Universitario de Neurologia, UBA. CABA Argentina

2.3. Recruitment protocol. Description of study population, inclusion and exclusion criteria

The fieldwork took place in Buenos Aires, Argentina at the Ramos Mejia Hospital, Neurological Department. All participants in the TP offered for people with Parkinson's disease in that hospital were invited to participate. Only those patients that had attended at least 8 out of the 16 classes over a period no longer than 4 months were eligible for the study. Exclusion criteria were individual factors identified by department medical staff or the interviewer that may put a participant in any harmful or uncomfortable situation such as speech difficulties, or any other physical or emotional considerations that could make the interview or its outcomes harmful for participants.

Nine patients enrolled in the TP but only eight attended at least 8 classes. And were eligible to participate in the study. They were verbally invited to participate in this research project stressing its voluntary and non-coercive nature. During this first approach to potential participants general aspects as well as necessary details about the study were provided. If participants agreed to being recruited they were given an informed consent form for them to review. Before beginning the interviews an informed consent process followed. During that process I made every effort to assure that: 1) participants read and understood the nature of all the points explained in the informed consent 2) participants were fully aware that they could stop the process at any time without any kind of change in the treatment they were being offered, and 3) there were non-coercive forces underlying in their agreement to participate. A copy of the informed consent form is included in the Appendix Section.

The study aimed to include as many participants as possible; thus, all eligible participants in the TP were approached and invited to participate. Out of the eight participants that completed the TP, two were out of town at the time of the interviews and are not included in the study. There were no other exclusions. Hence, the in-depth interviews were performed with 6 participants.

2.4. Data collection

The interviews followed Kvale and Brinkman (2009) guidelines and were: (a) in-depth, (b) individual, (c) face-to-face. A questionnaire was used to guide the semi-structured interviews (see Appendix Section).

I conducted the interviews in December 2010 in the privacy of an office in the hospital at a time convenient for participants. Interviews lasted around 90 minutes. They were conducted in Spanish. There was no compensation for participation. A copy of the interview guide and the informed consent can be seen in the Appendix Section. In addition, I observed one class and had informal contacts with 8 dance teachers with the teachers over a longer period. Dance teachers from Montreal and Buenos Aires were consulted to confirm or validate feelings and techniques experienced by dance students in general.

2.5. Data analysis

As a first step, a transcriptionist transcribed the interviews, and I later translated them into English. Then, to analyse the data I coded it for patterns and themes. Open coding and axial coding were used for these purposes. Grounded theory assisted me in capturing the subjective feelings and interpretations of healing that can take place for people by being involved in a dancing experience for

rehabilitation, and the variety of forms that it can take. In other words, it provided light in understanding how dancing was essential to healing defined by those who experience it. It also helped in capturing what defining properties or characteristics do participants attributed to dancing, when do they do so and what, if anything, did a participant with what he or she experienced? (Charmaz, 2006)

2.6 Ethical considerations

This study was conducted according to ethical principles stated in the Declaration of Helsinki (2008), ethics approval from McGill University's Internal Review Board was obtained before initiating study, consent forms took into consideration the well-being, free-will and respect of the participants, including respect of privacy and confidentiality. The records of the research have been kept privately. All access was and will be limited to the researchers at McGill University and Ramos Mejia Hospital. Transcripts have been kept on a password secured computer for four years and will then be destroyed. The study was accompanied by consent forms, which adhered to the McGill guidelines (www.medicine.mcgill.ca/research/irb) (McGill, 2009) In addition to these guidelines, particular emphasis was made in maintaining ethical considerations that are important for qualitative research. Risk for anxiety and distress, exploitation, misrepresentation and identification -by themselves or others- were contemplated and avoided.

3. The Role of Others

Any human being, regardless of the problem or situation that afflicts him, wants to talk to the others, idea that prompted Françoise Dolto to determine a human being as “the one that has the irreducible desire, the tenacious will to communicate with another human being” (Nasio, 2008b, p. 18).

Dancing tango provided the opportunity to share experiences with other participants and with skilled dancers. Both experiences gained a particular meaning for patients.

3.1 The Group

During the course of the TP, participants started to feel themselves, and act as part of a group that has its pivotal axis in dance perceived as a pleasurable and social activity. Across the interviews, they frequently referred to “the tango group”, “we”, and “us” showing an important sense of belonging. The fact that tango, in this rehabilitation form, was the pivotal axis for the congregation of the group, as opposed to the illness, had extended implications: the “tango group” became a valuable source of support as well as of active search for coping strategies and mechanisms.

Emotional support with a pleasurable activity that creates a joyful environment

In his first statement, one of the participants immediately introduced the idea of “the tango group” explaining that, in their case, they helped one another, a concept that was found all along his interview as well as in other participants’.

In the case of our tango group, we help one another, and the beauty of that is that it became a group, with very good atmosphere, because you come here feeling sad or depressed, and between all of us, we try to cheer you up and we spend a couple of joyful hours, listening to music (P IV).

Other participants also referred to the peer support they encountered in the group. “When I think between classes, I remember what happens when each of us arrives at the class. People encourage and empower one another; they are not selfish, they help each other” (P II).

One patient relied on the fact that dancing tango is a very pleasurable activity that allows them to have a very good time and he stressed how that facilitates a particular kind of bonding: one that facilitates coping with the disease.

It rocks (*lo pasamos bomba*)...because I went to another place and we danced tango yes, but everything was formal, based on learning how to dance tango...here I think that, without even noticing it, we are bonding....*bonding to defend ourselves from Parkinson!*...when someone needs help we try to provide it (P IV).

In fact, the possibility of finding coping strategies with others, including the physical experience of exploring and practicing them, seems to be very important to provide a feeling of being, supported and accompanied during this process.

Through a fun or pleasant activity, patients could find different and significant kinds of support and bonding that facilitated the process of coping and dealing with the disease. For instance, it provided the opportunity of being active in finding physical and emotional strategies. One participant shared his experience

about using tango as a strategy to stand up from a chair and highlighted the place that those, other than himself, have in this process, something that co-participants also reflected upon:

...And it was like this, we analyzed the steps, applying the tango steps to daily walking [...] It gave good results to me and I think that it was the same for others because we see ourselves more erect when walking, and...I mean, I feel...how can I say it...? *Accompanied by the group!* (Italics is mine), because when I am or when one is a little bit down or tired, between all, we try to uplift that person's mood; the other thing is that we start incorporating humor, we tell jokes. It started without thinking about it and the atmosphere changes and we have a good time, listening to music, telling jokes and also talking about important topics (P I).

The importance of "others" in the healing process was expressed and opposed to fighting alone

When you are alone, you do not see certain things or you do not realize, and fighting alone is also too tiring, it is very consuming....there is a moment that makes you feel like giving up, lowering your arms. Instead, with the group it is like...in my case, I wait for that moment to have a good time, looking for solutions with the others, using the material we saw, looking for or practicing an exercise together, talking, walking [showing the tango walk in a practical position]...As I said, we change the atmosphere and the mood and we spend that hour, that hour and a half with joy, not seeing the sickness as a torment but as something we have to overcome (P I).

The vignette identifies three aspects that arose in all interviews: the joy that dancing tango brought, the bonding it facilitated, and the active search for coping mechanisms it triggered, together with the positive effects it had on mood and emotions. It also stresses the impact that counting on others has in the healing process as a way of emotional and physical togetherness. Being with others facilitated the identifications of topics and sensations that could not be perceived otherwise. As well, it helped remove the burden of fighting alone or seeing the illness as a torment.

Other participants expressed similar feelings highlighting how illness isolates while tango brings people closer:

... We became a group, only one deserted, the rest of us remained all, we continued together, we even kept gathering [when the program finished], trying to continue. *Tango brings [people] closer, instead of isolating*, which is something that occurs in illness. The possibility of fighting, of lifting you up [...] to face the illness, tango is like an element to counteract, a weapon, because of that, of the happiness, it gives you strength, makes you feel good, it says to you 'I have to continue, I have to go to the class. We wait for Wednesdays, it keeps us motivated...and that, also depends on the teachers...the fact that you feel engaged or not ...it is [the class] something that you look forward to (P V).

Vilma (P II), another participant, also referred to the role that the group had for each of them several times during the interview. She was actually touched by the following experience:

One day, there was a young man, very young, I am not sure what problem he had besides PD and I am not sure why he came. He had to feed himself through a straw. When he entered, we all gave him a great welcome, we tried dancing with him, and the day after he came differently, he was a different person . . . he arrived with so many problems and now he is doing okay, even with a few classes. It was the case that attracted me the most...how he evolved (P II).

For some participants, attending the classes was also a way of extending their circle of people to socialize with, to share a recreational experience, and counting on a place outside the close family system. In this way, it became not only a way to extend socialization but also non-verbal togetherness.

It is also good to have more company, because I try not to bother my kids, they have their own families and I want them to have time... to be together, alone... in intimacy [Rosa was living with her son, daughter-in-law and grandson]. So, sometimes I can feel a little bit lonely...it's good to come here to dance, have fun with my own people and let them [her family] have their own time...everybody benefits from it...it is also a place to say things that you cannot say or share otherwise... some people do not even say it at home [that they have PD] so they come here and they can have the support of others, even if we just dance and don't do or say anything else...(P III).

In conclusion, we can say that the embodied experience of dancing tango with another person within a group, as well as the verbal communication and exchanges that took place around the pleasurable activity represented an important source of

emotional support and bonding. This group experience also facilitated an active search for strategies, information and ways of coping with the disease. With the help of the group, participants felt more resourceful to counteract the effects of Parkinson. The meanings it poses in relation to the illness were clearly expressed in the following statement: “Our illness puts distance, separates, and isolates. Tango brings you closer to others” (P V). It is important to remember here that in the case of a TP we are not only speaking metaphorically about closeness but also corporeally. As a tango teacher expressed it: “tango lowers barriers, and it happens very soon. In a couple of minutes, you are very close to the other person” (Thompson, 2010). There are not many situations where that closeness occurs (Ericksen, 2011; Thompson, 2010).

In fact, the body sensations and perceptions emerge from the experience of dancing within a group: moments of both leading and following seemed to promote positive outcomes. The hugging, holding hands, mirroring and copying situations required by the dance activity mean that people can get to know each other through dancing (Jones & Houston, 2011). The idea of getting to know through body language or non-verbal communication is relevant to the concepts of body image and body awareness explained in previous chapters.

Ericksen (2011) refers to the instant intimacy that happens around partnered dancing and she highlights that “instant” here does not only reflect on the speed in which a relation can develop but also on the fact that partners touch, hold and hug each other. She also invites us to think about the role of transitory relationships, something that is quickly increasing in our society where the number of people living

alone is also rising every year. This is becoming an excepted way of life, leading some authors to assert that friendship is becoming more permanent than family (Ericksen, 2011). Moreover, following Anthony Giddens, Ericksen suggests that the attempt to create meaningful social contacts becomes important and remains in “everyday social experiments” (Giddens as in Ericksen, 2011, p. 223).

One participant explains “in order to dance tango the role of the other is very important since you need to communicate with the person if you want to dance together” (P I). In fact, the experience of having to dance tango with another person was described by participants as awakening strong desires of communication in order to “understand each other when we dance.” This desire prompts the necessity of being extremely focused on obtaining the skills to improve body understanding, to create a state of fluid communication with the other partner.

If I give short steps -as I usually do because of the disease- instead of long ones, I end up dancing alone because I get far away from my partner, so it forces me to change my step, to stretch it, so I can stay close to her and we can dance freely (P I).

As we saw in previous chapters, being extremely focused on the activity is one of the conditions of having a flow, thus a pleasurable experience.

This participant, as well as others, dealt with a central aspect of partnered dancing: “the connection.” Although the connection may refer to different aspects of the dance experience between partners, I would like to focus here on the meanings that “connection” acquired in the context of this program. One of these meanings was the need to find a corporal way of understanding that may require to “force or adapt

one's natural steps, to communicate with the other person" as stated by one of the participants. And that will extend not only to steps but also to movements and posture. In fact, this is something that occurs in any partnered dancing. The particularity in this case was that, being focused on making the moves properly benefited the person not only increasing communication, but also helping correct the kind of steps caused by Parkinson (the short steps). In other words, motivated by the desire to dance tango well and to be able to communicate and connect with the other person --in order to have a pleasant dance experience-- participants tried to learn and execute the movement as well as possible and this fostered the desired rehabilitation outcomes. In this scenario, the expected change occurs not as a consequence of an action performed with a pure rehabilitation purpose but as a consequence of an action based on the desire to dance and communicate better, most likely to have what we have called a "flow" experience.

The possibility of ameliorating symptoms through an artistic activity, offers the chance of moving from an illness-centered practice to a person or "activity-centered" one. As a patient with a serious back problem taking tango classes asserted: "when I go to physiotherapy, I am a patient with a serious back problem trying to fortify the muscles; when I go to tango (also for rehabilitation), I am just a dancer trying to have a better posture so I can improve my dance."

The idea of communicating through movement or even "speaking a common language" provided a comfortable embodied experience of being accompanied. One of the patients (P IV) expressed how he felt partnered or accompanied in this experience: "we both like tango, so we speak the same language [...] the two of us

are dancing tango, I don't know, the two under the same, and we want that it goes well... and the [positive] effect that this causes to the person who is sick.”

Other participants also pointed the role of getting to know, to communicate with another person through movement.

Dancing with another person is very positive because you communicate with that person, then it is good, it's positive, ...feeling that there is another person you can communicate with through dance, other than conversation [...] It's nice sharing something that you like [dancing tango] with others [...] you have the same satisfaction as the other person, it's something you do in twos, in pairs, and that produces satisfaction, pleasure (P VI).

Nasio, following French psychoanalysts Françoise Dolto and Jacques Lacan, states that “the ultimate human being's desire is the desire to communicate with others” (Nasio, 2008b, p. 18). Nasio argues that any human being, regardless of the problem or situation that afflicts him, wants to talk to others, an idea that led Françoise Dolto to define a human being as “the one that has the irreducible desire, the tenacious will to communicate with another human being” (Dolto as in Nasio, 2008b, p. 18). It is important to reflect on how communicating with another person through movement --when movement is affected as it is in PD-- can be lived by people. Concepts like being accepted, receiving warmth, being encouraged, finding harmony, being chosen, finding security and feeling bodily integrated were raised by participants.

In fact, the medical benefits of art in general have been explored by art medicine and creative arts (Lippin & Micozzi, 2011; Jill; Sonke-Henderson et al.,

2007). As stated in Chapter 1, art has the potential to make the body speak and to be experienced in a way that provides the opposite situations to the ones triggered by the illness (Mendelsohn, 1999). Patients may experience discomfort, stress, immobilization, pain and fears, all experiences that can make patients feel somehow betrayed by their bodies leading to feelings of anger and disconnection towards them (Mendelsohn, 1999; Jill Sonke-Henderson, 2007) Through dance, a patient may have a joyful and pleasant experience, can make the body express helping to bridge the disconnection or separation with the body and with the environment (Jill Sonke-Henderson, 2007).

To conclude, we can say that through a pleasurable activity, participants found a peer support group that prompted bonding and togetherness, promoting better coping with the disease. This bonding endorsed finding strategies, not seeing the sickness as a torment, changing isolation to openness, and extending social connections. All these perceptions were prompted by the desire of having a flow experience that required non-verbal communication and body awareness.

3.2 The experience of dancing with the instructors. An embodied experience of freedom and security

Dancing with the tango instructors produced feelings of freedom and security. Participants, unanimously, mentioned dancing with the teachers as a very pleasurable experience. Indeed, that was identified as the most anticipated moment of the class nearly in each interview. Several participants also pointed it out as one of the most memorable moments of the entire program.

Invariably, the experience of dancing with the instructors was related to pleasant sensations and feelings. Common and particular topics amongst patients were at the base of these thoughts but in all cases, they were reported as meaningful or significant. This analysis of the participants' interviews reveals a link between these pleasant sensations and a feeling of security, freedom and confidence⁵.

Just to start they [the teachers] do not have PD, so their bodies are relaxed, not stiff [...] On the contrary, the other day I wanted to dance and I was super stiff, I was not able to dance. With the teacher, I started to slowly sense that she was more relaxed [than him] and then I started to feel more relaxed too (P IV).

Several participants pointed out how they perceived their bodies and movement when teachers are in charge of cognitive aspects of the dancing.

When you dance with a person that is also learning, or at your level, they usually care about their dancing and that's it [...] they cannot do more...whereas when the teacher leads you, they care about you, about all aspects of dancing, he knows how to do it. The same happens when she [female teacher] leads you (P II).

In the same line, another participant shares why she feels secure and free when dancing with a skilled dancer

⁵ It can be difficult to distinguish between confidence and security since they can both be expressed as "*sentirse seguro*" in colloquial Spanish. I would like to recall on the spectrum of definitions that the word freedom has as per the dictionary with particular emphasis in their physical or emotional states of non-restriction: 1) "the power to act, speak, or think as one wants without hindrance or restraint," 2) "absence of subjection to foreign domination or despotic government," 3) "the state of not being imprisoned or enslaved" 4) "the state of being physically unrestricted and able to move easily," 5) "the state of not being subject to or affected by a particular undesirable thing," 6) "the power of self-determination attributed to the will; the quality of being independent of fate or necessity" and 7) "unrestricted use of something." (Thesaurus)

For instance, when I dance with another participant, both of us are learning, so the other partner does not make that move with confidence...with the teacher, you know that you will not make so many mistakes, you will not be misled, so you feel secure. With the teacher, you dance confidently, more secure. With any other person, you have to pay more attention (P VI).

Another patient stated:

When the person you dance with dances well, you change; you free yourself, you can be more relaxed. If not, you have to pay more attention and, most of the time, you end up tripping on the other person, or forgetting the music.

Some people do not know how to dance, even a *chamame*!⁶ (P III).

As a cognitive experience, dancing with the teacher facilitated the student to free his/her attention from a few of the variables or dance components since several aspects are consciously or unconsciously managed by the professional. Dancing requires a good use of space, rhythm, body effort and posture, just to name some of them. Skilled dancers can manage all these variables as a result of hard training. Beginners or less trained dancers generally struggle to integrate all elements: managing their bodies, attempting to coordinate the desired movements and maintaining the rhythm, the space and other aspects of the dance. In trying to achieve a particular goal, teachers can purposefully be in charge of selected variables allowing the student to focus on specific aspects of the dancing. Freeing the attention from some relevant aspects of the dancing -that will still be incorporated by the professional- can create an embodied feeling of freedom, security and confidence. It

⁶ *Chamame* is an Argentine folk dance.

also provides a feeling of achievement since the person is able to dance at a more advanced level.

When I dance with the teacher, I dance as I want because she always has steps to “exit”⁷. Instead, if I dance with a person who does not know to dance, as soon as we make a small mistake, we step on each other [...] When you dance tango like this, *you are free because that person knows how to accompany you* (P I).

Indeed, this thesis maintains that, when some variables can be verbally or bodily managed, corrected, or adjusted by the professional, the person undergoing a rehabilitation process can have a temporary perception of his/her body schema or body image that can produce a beneficial impact on the sense of self. The mediating mechanisms for this to happen are 1) being relieved of simultaneously keeping up with all dance variables as well as successfully integrating them -as when dancing alone, 2) experiencing a corporal sense of security transmitted by the confident execution of the partner’s movements, 3) feeling more secure of achieving a better body communication since the partner will not add his or her own technical difficulties to the dancing. In this sense, we can state that the skilled dancer acts as a relevant support, almost as providing a cognitive and social scaffold. All of these processes may provide a unified, more coordinated and free experience of one’s own body.

In addition, the analysis of the data shows how, permitting the opportunity to free one’s mind from some variables allows the person to direct attention to other aspects of the dancing that can be important or significant for each particular

⁷ “To exit” means to start the dance.

individual. As an example, one of the participants expressed that when he was dancing with the teachers he could be mostly focused on his posture and on freeing himself a bit from “the mark”⁸. The way he perceived that PD was taking a toll on him was precisely through his posture, or as he said “it is my backpack.” At the time of the interviews, ending up all curved or deformed by the disease was one of his most disturbing fears.

Embodied cognition, anticipation and integration

Following the concepts of embodiment (Blasing, 2010; Wainwright, 2003), we can argue that expert training assures that the cognitive, physical, and proprioceptive⁹ information required to execute a partner dance at a professional level, is embodied in the skilled dancer. The person who is learning can most likely perceive this embodied information through the embrace or frame. Through the experience of dancing with their teachers, participants may be receiving a sense of balance, posture, rhythm, and spatiality that facilitates and makes the experience of dancing more rewarding, pleasant and beneficial, providing a sense of security and freedom.

Correlating with this experience of security is the body sensation that results from a sense of integration and anticipation. These feelings were identified by Lacan in his work about the Mirror Stage (Lacan, 2005). Actually, one of the first spontaneous comments of almost any person who experiences partnered dancing for the first time -either with a teacher or a very skilled dancer- captures that feeling

⁸ The mark consists in a body message that the leader transmits to the follower in order to create communication.

⁹ Proprioceptive is the capacity to detect the motion or position of the body or a limb by responding to stimuli arising within the organism. (The free online dictionary)

pretty well “I felt I was dancing” or “It felt as if I knew how to dance.” In these statements, people usually describe a particular body sensation: the perception of being able to do something that their own body cannot produce without some kind of assistance or support -since it does not have the knowledge, ability and coordination to carry it out.

Lacan (2005) calls this kind of perception an “anticipated stage” due to the fact that it provokes a sense of integration previous to the subject’s own capabilities (Grosz, 1994b). In the mirror stage he describes, this situation takes place under certain circumstances, such as being held by the mother -or a relevant other- in front of the mirror, and is a source of satisfaction, as well as an important stage in the subject’s constitution of the body image. Lacan describes the mirror stage as the relevant moment when the child sees himself in the mirror and discovers his image. The mirror returns to him an integrated image of himself while his own uncoordinated movements -the mirror stage happens between six and eighteen months- dispense him a different experience. The role of the others, holding the child and providing the necessary emotional support for that experience is crucial (Lacan, 2005; Nasio, 2008a).

One of the participants expressed that the pleasurable aspect of dancing with a skilled dancer was that

You can feel *the music of the body in movement*, then you can learn. But if I listen to the music and the body does not accompany, there is no movement.

When I dance with somebody who knows how to dance *I feel the body all*

together, in sync [*siento el cuerpo todo junto*] and for me, this is a very pleasant sensation (P III).

A beautiful memory comes to Vilma's mind "one woman came to me and told me, 'I can't understand how you walk so... [she does not find the word] but you dance so well!' It seems that dancing gives me *harmony*. And walking, sometimes I do not... [have harmony], I trip, I fall (P II).

The sensomotory integration closely relates to the sense of self as conceptualized by certain psychoanalytical movements. The psychoanalytic concept of unconscious images of the body image presented by J.N. Nasio (2008a), recuperates the idea of the body sensations as a fundamental part of the ego construction. Nasio states that "I am the body I feel" (2008a, p. 56). A temporary feeling of integration can be significant in the constitution of the body image and the sense of self and can be linked to the plasticity and projection capacity presented in Chapter 1.

As presented in previous chapters, the body schema and body image have the capability of projection and plasticity. We can infer that the quality of movement that originated in the skilled dancer will allow the less skilled dancer to sense his or her own body as well as the environment in a "modified way." In this sense, hold, body contact and embrace, together with the information they encode, can be acting during the partnered dance experience as an instrument or projection of the own body. This can enhance feelings of security and confidence since the whole world will be temporarily sensed through that body schema. Current studies in neurophysiology have provided evidence on the existence of mirror neurons in primates and human

beings. When observing a simple movement, mirror cells activate but, what was extremely surprising was that they correspond to the same brain area that the ones activated when we actually perform that movement (Calvo-Merino, 2010).

The possibility of correcting through the lead and not only through verbal communication should be carefully identified and interpreted. Two participants explained that the pleasure associated with dancing with the teachers also emanated from the fact that they can give you verbal and body correction.

They give you corrections and by doing that, you will learn how to “fix” things in your body... they can correct you by telling you things, by explaining you how to do something in a better way...and also, by placing you differently or making body movements that allow you to modify things (P IV).

In the same venue, another patient explained:

They teach you the moves... and you start being conscious, aware that the steps have to be long, not short. It feels good. After that, they dance with you and you feel it... [the correction] in your own body, so you can try to fix the problem (P I).

When asked about his favorite moment of the class, one participant identified the moment he dances with the teacher because:

Dancing with a person that knows how to dance or knows more than you [...] to teach you, that gives you a lot of pleasure. The teacher corrects my mistakes. She makes me realize that I am not leading well, that the mark is not clear. With the teacher, you almost don't need to lead... she understands

every subtle movement. [Q: and why is that so important for you?] It's the satisfaction of polishing the details, so the dance is more elegant, for her it is like a "repairing workshop", she sees something wrong, and she repairs it. With another participant, it takes a lot of time to find where the problem is, however with the teacher ...you see how the teacher tries to stretch her [a participant] gait, without stepping on her, she helps her find her balance, she tries to do all of this with her own body [with her lead] (P IV).

The feeling of security was also connected with the fact that dancing with a person that helps perform a movement, allows the practice and consciousness about movements that would not be rehearsed or practiced in any other way. One of the patients (P V) noticed, "...you need to remind the body what the body forgot to do." In a research project conducted at the English National Ballet for people with PD, researchers found that dance program gave participants "the tools to increase body awareness and to increase confidence in order to use the mobility they have, *but may not have had the courage to use*" (Jones & Houston, 2011, p. 24).

One of the participants brought the meanings that body actions can conceive as a way of expressing feelings through non-verbal language. She expressed it in the following way....

I love dancing with the teachers. Maybe it is the contact that helps. When they enter, [...] if they did not kiss me...I say "you did not greet me"...we are losing physical contact among people. When we lose contact, we lose a lot of things, because that brings support, hugs, caresses, and contact. They are like words, *words of affection and not words of rejection*. I am not talking about a

close or intimate relationship, because that is stupid, but you feel that there is no rejection, that they see you as a normal human being (P III).

Another participant explored how the TP helped her to recuperate confidence in movement, something that Parkinson's disease threatens all the time.

At the very beginning I was shy, but later since they communicate very well with you, you start feeling more secure, capable, you get the courage, so you start finding that courage and slowly it starts working [...] and you feel something very positive. They [the teachers] give something to you, something that you can use any time. For instance now, if I go somewhere and I want to dance, I feel more comfortable, I do not have the fear I had before that I would not be able to do it (P VI).

Based on all the fact presented above, the experience of dancing with the teachers seemed to provide the opportunity to dance more securely and feel more comfortable even more relaxed and free. It also provided the opportunity to increase body awareness and the confidence to use the mobility that the patient already had (Jones & Houston, 2011). All the above reasons made me call it an embodied experience of security and freedom.¹⁰

During the tango program, participants experienced a rehabilitation modality that gave them an accompanying role that was generally perceived as providing positive outcomes. The findings suggest that through the experimentation of

¹⁰ There are differences to consider for men and women, or more precisely for leaders and followers in partner-dances. Although the leader's role, usually assumed by man, allows being in charge or control of more dance elements –something that is actually part of the role-, men also benefit from female teacher's cognitive knowledge since they bring their embodied cognition to the dance experience and that helps the couple communicate easily.

movement and tango dancing, participants had the chance to affect their representations of the body and have a sense of holistic healing. The role that others partook in this activity helped provide a sense of support and security. Amanda's words reflect the multifaceted aspects of those meanings:

When I finish a class based on exercises, I am well, my body is well. Instead, in the other modality [dancing], you do something with pleasure, something that gives you a huge satisfaction. It gives you joy, how can I say it....you communicate with another person. It is not independent of you, there is another person that you communicate with and you communicate well. You try to understand each other, or you find support in her, it's something like that. [...] I communicate with the other person through dance, a person that helps me reach some achievements. [...] Because by leading you, you achieve certain things or goals, goals that the teacher has been indicating [...] at least for me, it is very pleasant, it gives me satisfaction, energy by knowing and realizing that when someone leads me well, I can do it.

(P V)

Her vignette shows the joy, sense of vitality, self-efficacy, and connectedness that she can feel through the experience of dancing with a teacher, all things that have been connected with eudemonic well being.¹¹ It also portrays a positive subjective experience of achievement generated in a relationship based on body movement. It is

¹¹ "Well-being is a complex construct that concerns optimal experience and functioning. Current research on well-being has been derived from two general perspectives: the hedonic approach, which focuses on happiness and defines well-being in terms of pleasure attainment and pain avoidance; and the eudemonic approach, which focuses on meaning and self-realization and defines well-being in terms of the degree to which a person is fully functioning" (Ryan & Deci, 2001, p. 141).

possible to infer that, although this modality of rehabilitation is not based or conceived as a traditional dance therapy intervention, it contains some of the elements of a therapeutic or healing relationship, understood as any relationship that has the potential of producing healing or beneficial change. Nevertheless, I chose to follow McDonough-Means et al (McDonough-Means, Kreitzer, & Bell, 2004: 1), in their approach to what they call the “phenomena of healing presence.” The authors describe two types of presence: a psychological and a physical one, respectively called “being with” or “being there.” The “being with” is a mind-to-mind contact that requires non-judgmental listening, empathy, caring, attending to and accepting qualities, whereas the “being there” is a physical body-to-body proximity that involves touching, examining, hugging or holding. The authors also describe a third or spiritual level, which they call therapeutic presence and requires centering, intentionality, intuitive knowing, imagery and connecting. They make a distinction between partial and full presence, defining full presence as “a way of ‘being with’ in the context of another, includes psychological as well as physical presence and is the embodiment of empathy, caring and the use of self in the face to face interaction (McDonough-Means et al., 2004, p. 2).

The question of when a “presence” has a healing potential arose for the authors. In their attempt to answer it, they focused not only on the individual nature of the healer and the “healee” --together with their beliefs and psycho-social-spiritual traits-- but also on the attributes and forces that are “the core or sufficient and essential properties of the healing presence” (McDonough-Means et al., 2004, p. 4). They attempt to find those attributes or forces that happen in the dyadic encounter

and have the potential to heal, or at least, to optimize positive effects. Some characteristics of the healer that contribute to a full healing presence are empathy, compassion, and certain kind of charisma. These healer's characteristics or skills permit or facilitate the healee to "come into resonance" with his or her own same qualities allowing a process of self-healing transformation. What's interesting is the authors' awareness about the limitations of the concept –exclusively based on the healer's skills- when we omit to identify which characteristic of the healee, the relationship or the interaction prompt this process (McDonough-Means et al., 2004).

Supporting the idea that an implicit goal of a healing presence or interaction is to produce or inspire the healee's initiation of a self-healing process, the authors identify "absorption" as a key element to prompt that process. Absorption in this sense is the personality trait capacity to detect and to respond to a healing presence. As we saw in previous chapters, activities that prompt "flow" usually compel full absorption or presence in the task. In this case, dance facilitates full absorption in movement, body awareness, representations of the body, non-verbal communication, and the music. At this point, we can suggest that, under certain circumstances, the nature of partnered dance may encompass aspects of "full presence" which in conjunction with the pleasure and flow that the activity usually produces, may bring about beneficial or restorative outcomes. The physical and artistic nature of dance together with the need of communication that tango requires, provide to significant "others" a double role of "being there" and "being with", creating a particular context for a process of "coming in resonance" with the body and the self.

4. Reshaping the self

Dancers and people with PD “really have a lot in common [...] Neither [of them] can take a movement for granted” Olie Westheimer (Cox, 2009)

The possibility of reshaping the self through tango can help understand and experience the self in a modified way by providing: 1) feasible strategies to apply in daily life; 2) a sense of liberation and; 3) the possibility of recuperating significant aspects of the self .

4.1. Tango as an artistic strategy to apply in daily life

For most patients, the tango program had the value of providing a resource that could be applied to challenge daily situations posed by the disease. This manifested by remembering steps, adequate posture or specific corrections. Participants reported using these strategies when feeling unable to perform a task or when willing to modify their posture, gait or a state of freezing. Patients reported ‘stopping’ with the unwanted situation they were facing and remembering something they had tried, spoken or analyzed during the tango classes. In this sense, tango, and tango movements were perceived as a tool that needed to be first, learned and understood; second, analyzed and later applied in daily situations.

Throughout this process, patients conceived tango as “a strategy to be applied in daily life.” In fact, patients considered the utilization and application of this knowledge a crucial component of the experience. They expressed that perception in statements such as “it [tango] is not a drug that cures you and you finish with the problem. It’s a complement....and you have to apply it.”

Indeed, tango was used as a strategy to deal with daily activities such as standing up from a chair, reorganizing coordination to walk, crossing a street, getting out of short steps, regaining a straight posture, being able to dress up, being able to regain organization. Attending the TP helped participants analyze within a group, how to use the learnt tango movements in a way that facilitated their daily activities. As previously stated, dance requires the use of cognitive strategies to achieve a desired quality of movement.

A remarkable aspect is that patients perceived the application of these strategies as a way of finding a certain solution to a movement or postural problem caused by the disease –a solution that could be temporary or more permanent-. In turn, this was perceived as a liberating experience, an experience that meant freeing the person from that difficult situation (The concept of freedom will be expanded in 4.2). In addition, the fact that the experience happened in a pleasant and social environment made the participants' experience in tango richer than other forms of rehabilitations since they used it or recalled it several times outside the classes. We can see a variety of these aspects in the following quotes.

Whenever I start with the 'short step', I stop and do what the teacher told me: to breath, to think 'I have to walk properly'... so I end up walking well. This means that if you think about it, you can do it better. It is the positive thing that you need (P VI).

Another participant used tango as a strategy to recover rhythm and organization. Guillermo explained that PD jeopardizes rhythms in normal life, something that, in his view, is necessary for anything we do,

...Everything in life has a rhythmicity...So when I am frozen or when I lose regular rhythm or continuity, or when I get totally disorganized, I start singing or dancing tango and thinking 1/2...1/2. Don't forget that tango is the 4/4 music, so it gives a very strong and clear beat. Usually, after doing that, I feel I can go back to my activities (P IV).

Other participants also share their strategies:

In my case, and I believe this is for all of us, practicing tango helps us stand up, it gives stability. Without realizing, one starts giving the short steps, speeding the movements up [as a consequence of PD] and tango is the opposite, it is the long step, trying to balance your body before moving, and all of this is useful to walk. [...]Yes, as an example, the first thing we saw was how to incorporate from a sitting position, one of the big issues for me at least, was that, when I was at a restaurant and the chair was in a reduced space, how to stand up to go to the toilet, or to enter or exit the place!... that was my problem, I needed help.[...] and talking in the tango group, analyzing, we saw how to put the feet to stand up using the smallest space possible, and without help. And I think that we achieved it, almost one hundred percent of us... but all of us have achieved, in a very energetic way, how to stand up...and apply it...this is liberating! Later on, time goes by and you don't take that into consideration anymore, because you apply it automatically...it is a solution that you incorporate and you start being focused or attentive to solve another one (P I).

Tango was also used as a strategy to recover posture:

...When that happens I stop, think about the classes and what the teacher usually tells me. She says, "...you know, it is easier to dance with somebody when the person is in this posture -showing being straight or upright" [...] So, I immediately think about that, it is almost automatic and I recover my posture and I get rid of the cavern man something that bothers me so much (P I).

Either in an attempt to overcome difficulties presented by ADL, to find pleasure in rehearsing steps and movement focused on the desire to improve their dancing skills, or just because it comes as a spontaneous result of listening to music, patients seem to practice the tango moves, apply them in different situations and rehearse mentally between classes. This strategy was useful in ameliorating posture, walking, getting up from a chair, reorganizing rhythms or others. One of the patients stated, "In my mind, I dance the whole day...and I also dance in my kitchen... while cooking" (P II). In addition, the fact that tango is a partnered or social activity makes participants feel physically and emotionally supported or accompanied by significant others, something that becomes important to overcome tough feelings that the sickness may pose.

4.2 Sense of liberation

"Tango means freedom, it is a complement...you have to start doing it and you realize how beneficial it is for you, as a therapy" (P II).

Participants reported certain degree of freedom and liberation as a result of the tango program. This feeling of liberation can be extremely important since, as Marcia Scherer found in interviews to people with disabilities, functional limitations

have the potential to leave a person in a “state of stuck.” That state, captured through the reported experiences of people with disabilities or functional limitations, is not only circumscribed to the restrictions of the body but also to the expectations of society and health professionals (Scherer, 2005).

The possibility to express oneself through dancing, and to communicate with others was identified as one of the important things that art has to contribute to medicine. In fact, one of the participants made a link between art, expression, freedom and a state of relaxation or wellbeing. “Art involves the expressions that give freedom and allow you to loosen, [relax] yourself [...] it makes you feel less stressed. And that is very good for you and your health” (P VI).

Other participants expressed that tango *means* freedom connecting it with the deepness that an illness represents in people’s lives. Tango means freedom...Illness is something deep, whereas dancing is something different, it gives you freedom, it liberates you. A disease constrains you and through the creation that tango allows, it gives you freedom (P II).

In this last paragraph, the participants contrasted the sensations of freedom and liberation that dance produces in the body and the person, what Wendell (1992) called the “constrictive or restrictive sensations” that a disease or disability may inflict. Other participants expressed feelings of freedom emerging from different perceptions:

My life was vastly connected with music, something I do not do professionally anymore, so I have [difficult] moments, and this [tango] helped me with this problem [PD] Dancing... I have a lot of rhythm, but walking I

am a little bit clumsy. It's as being *liberated*. [Q; and what do you feel when you feel liberated, how can you explain it?] It's letting yourself be carried by what you feel at that moment [...] you have to let yourself be carried by the music. [Q: how do you describe what you feel about the class?] Liberation, freedom, joy, musical joy. [...] It's the same for everybody, we all have the same experience, when we leave the class, we leave happier. [Q; and do you know why?] Yes, because it [tango] is the study that gives you freedom and movement (P II).

Before continuing I would like to bring upon, as a form of recalling, certain meaning of the word freedom i) “the power to act, speak, or think as one wants without hindrance or restraint,” ii) “absence of subjection to foreign domination or despotic government,” iii) “the state of not being imprisoned or enslaved” iv) “the state of being physically unrestricted and able to move easily,” v) “the state of not being subject to or affected by a particular undesirable thing,” vi) “the power of self-determination attributed to the will; the quality of being independent of fate or necessity” and vii) “unrestricted use of something” (Thesaurus).

Marcia Scherer (2005) invites us to think about the “state of stuck” wherein a disability can conduct a person either physically, socially or emotionally. Based on interviews to people with a disabled condition, she tried to have a better understanding of the disabled experience. She found that interviewees expressed a deep and difficult experience of confinement, which led her to name her book “Living at the State of Stuck.” One of the salient aspects of her research was that people explained that they had to learn new patterns not only to deal better with their

health problems but also to deal with the expectations others had on them. Out of different concerns those participants expressed, was the challenge presented by two problematic and sometimes opposing situations. The first one was having enough motivation as to pursue a rehabilitation program and the second one was not willing to achieve a degree of autonomy that leads to frustration due to the impossibility of accomplishing that goal. The ways in which health care professionals attempt to change that feeling when proposing a rehabilitation program are very important. More attention should be placed on the emotional aspects of disabilities and the ways that people can deal with those limitations. Feelings of safety and security, achievement and affiliation, she states, should be seriously taken into consideration (Scherer, 2005).

According to the above conceptions, Scherer proposes that a successful rehabilitation program should intend to “improve physical and general well-being within the shortest period of time either by helping the person overcome the problem or the impacts and limitations that a sickness, disability or limitations provoke” (Scherer, 2005, p. 67). But more importantly, she stresses that success should be assessed from the perspective of the person experiencing the problem. Hence, reckoning on a definition of rehabilitation that focuses on the restoration of a person’s “physical, sensory, mental, emotional, social, vocational and recreational capacities” (Scherer, 2005, p. 67), we can identify how each TP participant focused on singular benefits of the program. The success of the program was evaluated according to how each participant experienced the limitations presented by PD and how TP permitted to reorganize certain aspects or areas of their lives. This will also

depend on personal meanings of the illness¹². As we found in the data, some participants focused on the positive outcomes it had on their emotions, others on posture and balance, and others on how it helped them recover things from their past or feel capable again, regaining security and confidence and providing a good experience as a patient. As presented in chapter 1, dance encompasses a lot of physical, emotional, relational, cognitive situations that may act as a cosmos wherein to acquire, project and construct experiences that can benefit a patient to improve or restore his or her well-being. Thus, dancing may offer a path for coping, as opposite of succumbing to the limitations imposed by the illness, an idea presented by Wendell in her consideration on the disabled experience (Wendell, 1992)

To conclude, we can say that dance and partnered dance as non-traditional forms of rehabilitation may provide participants with an embodied experience of freedom, security and safety. Those experiences appeared to trigger a sense of liberation, which either temporarily or more permanently can facilitate moving from a state of stuck.

4.3. Recuperating something from the past.

Although participants reported many commonalities about the positive effects of the TP, the experience posed a unique value in each case, which can only be understood in the context of individual patients' lives, values, beliefs, fears and social contexts. Indeed, one interesting aspect of this research was that almost each interview concentrated on a particular central aspect. After an extended analysis of the data and the relevant literature, I was led to interpret this phenomenon as identifying the core aspect that permitted participants to recuperate something

¹² For meaning and the illness see McClintock Greenberg (McClintock Greenberg, 2007)

meaningful from their pasts, facilitating a “sense of continuity” and the feeling of experiencing a “sense of self” as presented by Nasio in his conception of unconscious image of the body (UIoB) (Nasio, 2008b).

Guillermo (P I). Recuperating rhythm to recover organization

[Q: What did you think when your physician proposed you to come to the TP?] “I told her: yes!!!”...I thought it was good, I had already danced tango. I danced, but how can I say it? Not the ‘medical dance’....a ‘homemade’ dance”... [Q: What do you call medical dance?] Ok, in the medical dance, there is a person that is making you dance and making you dance *the beat* [el ritmo]...that is very important in this case. [Q: I am interested in your idea of a medical dance; can you tell me a little bit more?] There is a person that is taking....is teaching a dance, let’s imagine that I do not know how to dance, the teacher is taking a dance to make the person that has Parkinson feel good. [Q: how do you differentiate that from the homemade dance that you mentioned before?] Well, it is very similar, but not exactly equal that....you have to manage [marcar el compás] the beat, the way of keeping the beat.”

And later on in the interview, Guillermo spontaneously expressed what tango did for him in relation to the illness.

Dance gives another beat to Parkinson, which [PD] takes you out of the beat. [...] what you lose in Parkinson is the beat, the rhythm of things. [Q; how is that? Can you tell me more?] Well, sometimes during the class, you are bended.... you trip at walking, one gets rough, then many more things happen to you, at least to me, you fear certain things, you think that you will not be

able to do it anymore....and tango helps because you are dancing, listening to the beat and in Parkinson what you need is a beat, a rhythm, a pace. I mean, I can do like this (setting the pace with his hand) and that helps me...

When asked about the difference between tango and other forms of rehabilitation he had pursued, Guillermo stressed that tango marks the rhythm of life: “everything has a rhythm, even to get up from the chair or brushing your teeth [...] so tango is beneficial, I insist, because it is helping you recuperate the rhythm. The problem of Parkinson is the rhythm... besides the other things.”

In the above paragraphs, we can see that, for Guillermo, tango meant a way of recuperating rhythm, something he considered one of his major problems and became one of his dreaded fears.

Vilma (P II). Recovering the chance of dancing. Recuperating the confidence of being capable

It [Parkinson] is a disease that suggests a lot of understanding. People do not interpret it well...it is a sickness that brings a little bit of fatigue, that's what I have now...I would like to understand it. [Q: Vilma, how did the TP help you in relation to your illness?]. It gave me freedom [...] by moving I felt freed, something that did not happen with other things [other rehabilitation programs], the music was carrying me along. [...] Three years ago, I was studying, I had different courses and I studied there, during the class. I used to understand perfectly well but the day after, I did not know anything. This is what Parkinson has... It does not allow me to continue. I lose things...And dancing? I continue because I like it, that has a lot of influence... I had

stopped [dancing] before, because my husband did not like tango, but I love it...so I remember I said [when the physician told her about the program]: *finally I will do something fun...* [Q: why finally?] Because they are “forcing” me to do it! [She laughs] I wanted to study tango long time ago and I couldn’t, and this [TP] gave me the chance to do it [...] Yes, because when I was young, I used to dance very well. Once, we went on vacation, sixteen days, and I danced fifteen of them, but later... I did not dance anymore.

Later on, in the interview, Vilma, who had to abandon her successful career as a musician, expressed that tango helped her regain the confidence that even in the face of PD, she can continue to learn. She stated that the TP gave her the willingness to study again. She believed that as we get older, we are always at risk of becoming “*mediocre*”, and the tango program helped her be more aware, take care of herself. Parkinson is a little bit of that “barriers, barriers, barriers and dancing tango gave me freedom,...so I feel I can study again.”

The experience of dancing tango provided Vilma the chance to regain her ability to experiment movement in a safe and pleasant environment. That possibility, in turn, helped her recuperate confidence in her capacity to dance and to learn new things fostering a sense of continuity with her past, disrupted by the illness. On this point, it is important to remember the importance of self-efficacy in people’s lives as well as the role of creative activities in building abilities and competencies that promote self-efficacy with their impact in mood and depression (Evans, 2007).¹³

Rosa (P III). Recuperating old dreams and a connection with aesthetic and sensuality

¹³ I use self-efficacy here as “one’s capacity to competently enact a particular course of action” which is expressed in the question “Can I do it? (Reeve, 2005, p. 255)

Rosa's interview started with a reference to music, and the opportunity to have a chance in a project that had been left behind, something that was also recalled by the rest of the participants. "I like music, I like tango. Will I leave this world without knowing how to dance?" Rosa explained that due to her parents' education she did not have the chance to do certain things, like dancing, but she was always very active physically, she did gym or other forms of exercise. But dancing has other components for her:

I see the teachers we have and I see myself there, I see the teacher, with those heels! I arrive [at the class] depressed and I leave well, everything affects me in a positive way....maybe more than affecting movement, because I am lucky that I still have good mobility, but it helps me mentally. It helps me regain the aesthetical and sensual aspects. I used to love dancing, singing, all that, and I used to do it at home, all day long [...] For instance, I know that I come here, to dance, so I wear another clothing, that makes me feel well. Here they understand, they understand what an illness means, and they help you.

And later on, when asked how tango helped in relation to PD, she said:

Internally! I don't know, it is like something that always remained there, inconclusive, because I was good at all those things, but again, it was difficult because they [her parents] did not allow me to do it, except school. Now, I am very happy, I can do this again.

Vilma spontaneously compared tango with other rehabilitation programs and she concluded that "most of the others do not have that 'sensor', a sensor that comes

with music, with partnered dancing and if you don't use those sensors, you lose them, they turn off. The other [rehabilitation] programs are like eating without spices."

So for Rosa, the TP offered the possibility to learn to dance, something she had always wanted but did not have the opportunity. On the other hand, it allowed her to reconnect with the aesthetic and sensual aspects of dancing, something she had always tried to keep despite the difficulties she could have found. When I asked Rosa how she feels when she is dancing, she immediately answered: "I feel like in my twenties when I loved music and dancing!" Maybe one way of understanding a reference to the youth is connected with the feeling of vitality¹⁴.

Benito (P IV). Recuperating posture, presence and joy.

This patient utters, "In our case, the practice of tango helped us stand up, gain stability. [...] When the class finishes, we are more upright, to walk...let's say, I feel, how can I express it? Supported!"

When asked about the differences he found in this program in relation to other tango classes he attended, he explained:

Here we see how to stretch the step so the person looks more upright, one is more slender. How, doing the gait longer, transferring the weight properly, you end up looking better. Both women and men look better. One of our problems, at least mine, is that the body gets tired so I start curving myself and I realize when I start tripping, that I do not coordinate, I am wacky,

¹⁴ Ryan & Frederick assessed subjective vitality, a positive state of having energy available to the self, and used it as an indicator of eudemonic well-being. They found that subjective vitality correlates with personal psychological factors such as autonomy and relatedness. They also found that more physical symptoms in a day predicted decreased energy and aliveness for that day which led them to argue that vitality is a sensitive variable affected by somatic and psychological factors (Ryan & Deci, 2001).

ungainly, and I look as “the caveman” and people look at you. They look at you for some reason. So I see that and I tell my wife “look at the caveman.”

When I asked Benito what he liked the most of the class he said:

It is global, the joy that we have during that hour and a half which is linked to the blues that anybody can bring, so you are in the blues... but with pleasure! [...]. Sometimes I am dancing all wacky and the teacher says: “presence, attitude” and that is more [effective] than hundreds of exercises. She shows you something, tries with you, and with a couple of steps, it remains in you forever. [...]. *The elegance of tango remains, it means a lot*, due to the elegance of the moves, the vertical position, keeping the body upright, is not a small detail. If I see myself reflected in a shop window while walking, I feel like the ‘caveman’. When that happens, I stop, think about the classes and what the teacher usually tells me. She says: “Do you know it is easier to dance with somebody when the person is in this posture -showing a straight posture-? [...]. So, I immediately think about that, it is almost automatic, and I recover my posture and I get rid of ‘the caveman’, something that bothers me so much! [...]. I still have the illness, *but I learnt to ‘dribble it’*. When I have symptoms, I find a way to counteract them. Tango is a very good activity to regain posture. Even if it [PD] does not get rid of Parkinson, it stabilizes it, I defend myself with that....I tried to find a solution for each problem that Parkinson brought, and I am achieving that, but overall, tango helped me with my posture, presence...because if I give up, I fall into depression. And tango helps me be upright... and that helps a lot.

Benito explains about the pleasure he feels when he dances and also when he improves his dance: “If you improve your quality of dance, you will be improving your posture.” His story summarizes the intertwine between pleasure, use of body sensations, the meanings that tango has for him –such as elegance—and how he can use “this material” as a strategy to overcome some fears and problems that the illness brings to him.

Amanda. Recovering feelings of courage, recuperating the pleasure of dancing.

Like the other participants, Amanda’s response to the first question, [“what was the first thing you thought when physicians offered you to participate in a TP?”] was a recollection of her past and something she had left behind.

To me, it was a very good idea, because I had danced before. I am very fond of dancing, any kind of dance, and I stopped dancing because my husband had quit, so I abandoned...but I always liked it. And I said to myself...If I danced before, I will try to see how I am now. So, I started and honestly, the result was very positive. A huge part of my torso was stiff, and [with tango] I started to loosen myself, and the body started to relax.

Amanda explains why mobility is crucial for her. She works everyday, something she enjoys doing. Hence, she is really afraid of losing agility and mobility.

For me, exercise and tango were both positive experiences, they both allowed me not to be stiff, which is where Parkinson leads you towards. But with tango you feel that you... you *achieve* something, something you had left behind because you were not capable anymore. It is like personal achievements. At least, this is how I felt because now *I dare to dance*,

something I had not dared in all these years.[...] I'd listened to tango all my life. It is something I'd experienced from a very early age, something that I had already incorporated. And having left it behind...was like... I felt really bad about it, and now, seeing that you can achieve it, that you can do it again is very rewarding.

Daring, finding courage again, and *achieving something*, all intertwined in Amanda's interview, are a series of recurrent topics. In fact, she utters that she can now experience this feeling through her body, each time they start the class and she begins listening to the music and walking slowly with the teachers who lead her forwards, backwards, to the side. "It is like starting to walk again, we start walking slowly...so you dare again...and slowly the teacher asks 'do you feel comfortable if we start dancing tango?' And then, we start making tango moves." In this paragraph, Amanda illustrates a connection between her body experience of overcoming her fears through a movement experience and how that experience translates to other realms of her life. In both cases, the experience seems to facilitate coping with mechanisms to the limitations that the illness presented.¹⁵

When I asked Amanda what she feels when she dances she said:

I always say that the sickness will not take me over, so I stand there and say 'you are there [talking about PD], but I will present you fight'...it is like achievements I have. Dancing reminds me of when I was young, that I danced, and I danced very well, it is like re-experiencing something that you have done, what you did in your sixteens, seventeens and eighteens. Being

¹⁵ This vignette also reflects a process of "full presence", "being there" as we presented in 3.1

able to do it again in your sixties and sick is very encouraging, very pleasant, it is a feeling that I achieved something I had totally left behind.

For Amanda, the tango program meant an embodied experience of “being able to” which allowed her to recuperate her dancing capabilities together with a sense of achievement and encouragement. “The program left me something very positive, something really good because now I can say ‘I can’. If I commit myself to do something, I can. The disease does not preclude me if I intend to.”

April (P V). Recovering security and recuperating the possibility to feel accompanied by dancing with others.

[Q: what did you think when you first heard about the TP?] April: ...Every year there was a meeting for Parkinson’s day...and I saw a lady, a person with Parkinson (*Parkinsonena*)...whose husband introduced her and she danced tango, it was incredible! One could see her, like those ‘spring dolls’. The point is that she drew a picture and later she danced tango, and... I always say that my body changes, my face changes, but her body was, something small, different, it didn’t look like a body, it looked like an articulated doll, and I saw myself there...because I had always liked to dance, I danced a lot, but later on, I found out that my coordination [was failing]...I was not able to dance anymore [due to Parkinson’s symptoms], in the family gatherings...and lately I had major balance problems. So, since the tango project was made to practice balance, to manage balance better I thought it was very important. What was important for me is that I like it. I am passionate about listening to music, so I liked the idea a lot.

Besides the physical improvements, April found that tango offered her the possibility to feel spiritually and physically supported by others, something that gives her security, strength and courage and helps her overcome one of the things she fears about this illness: isolation.

I used to come with a cane... I do all kind of exercises at home, I stretch, move my legs and a lot of things...but in the exercise program, *the movements are for yourself*; in tango, you have to be accompanied. [...] What happened to me is that I lost rotation, so, by experience, I went to folk dance [classes outside the hospital] but you go alone and you lose directionality. *But when I have somebody, it gives me security*, [because] I know that when I dance, I will not fall. And also, there is the romantic aspect, the embrace, it is as if [due to] our sickness we need the warmth of the other, I understand the tango embrace as... *we need someone who shares with us*.

In addition to the warmth and the sharing aspects, April feels understood, so she continues explaining what that means to her...

In tango, you know that you will not fall, because there is a partner [...]. You cannot say 'autonomy', because that is for 'one only', but it is a '*conditional autonomy*'. If I arrive with my cane, after I do the exercises, my cane is not with me anymore because instead, I have my partner, and I leave walking by myself [...] but you see? There is always the other, the partner, someone to share with; it is something spiritual [...] *someone that accompanies you to do what you like*.

Again, during her interview, it is interesting to observe how she constantly swings from the body aspects to the emotional ones of sharing, finding security and warmth, which illustrate one of the major concepts of MDMT, the possibility of the body to affect the mind and vice versa, captured in the motion-emotion byword or expression (C. F. Berrol, 2006).

When asked how dancing with a partner connected with her illness, April explained:

Parkinson is an illness that isolates, and I was always a person who fell down and stood up. But now that it is more advanced, I feel that it won, because it is something you have to fight all the time [...] I use the cane to recover security, but because 'I have the tango' I feel that I have something to counteract, and that makes me happy, it gives me strength, I say I have to continue, I have to come [to the classes]. I see this on Wednesdays, I come here whether it is raining, or whatever...this happens to all of us, we don't miss one class, we all come, because we are very motivated. It is also something with the teachers: both coordinators make us feel very engaged with the activity...

April expands on the fact that PD isolates, one of the main concerns for her.

Parkinson, although difficult to imagine, insulates, encloses you, and you realize you're losing a lot of things. So, it is not to recuperate everything, but something, at least, we find something to continue, because with Parkinson you have to continue but I feel I have something [tango] to defend myself with [...] and since I want to be autonomous, I try to find the tools to defend myself from the things that Parkinson is taking away from me.

For April, TP meant an opportunity to dance again and to feel accompanied, helping her counteract the isolation that PD represents for her. As a consequence of recovering some coordination and dance skills, she felt confident to dance again in certain circles such as family gatherings.

In my family, we have transmitted dance from generation to generation during the last 100 years, so dance for me has a family, emotional connotation. Since I was a child, each Sunday we used to go to my grandfather's house, and we all sang, and danced. I learnt to dance with my mother's brother, and today, one hundred years later, in our family, we still do the same, we dress up, we dance, sons and daughters with aunts and uncles, nephews, nieces...in contact with music and dance.

The participants' experiences presented here allow us to glimpse into the way that a sickness usually affects or disrupts the course of a person's life, colloquially expressed as "before and after the disease." Although there are multiple scenarios in which an illness may affect a person's life, a common factor can be found in how it affects the representations of the body and the sense of self, along with their impact on identity and sense of continuity (Cohen & Walco, 1999; Kaufman, 1994).

Nasio (2008b) conceives the sense of self as a consequence of the unification of the images of the body. In fact, rather than having a constrict representation of the body, several authors propose thinking about maps or representations of the body, supporting the idea that there are multiple ways of representing it instead of a unified one (Grosz, 1994c; Nasio, 2008a; Vignemont, 2011). Nasio (2008b), for instance, formulates the sense of self as a consequence of the reunion of the different body

images we have forged of ourselves, which have emerged and organized around different entities. Thus, following Françoise Dolto, Nasio argues that the body image is composed of three elements: “the base image”, “the functional image” and the “erogenous image”, all of them so intimately connected and inseparable that, when one is resented or altered, all the rest is affected (Nasio, 2008a, p. 26)(Nasio, 2008b, p. 26). Nasio refers to this body image as the unconscious image of the body (UIoB). This UIoB, he argues, is a consequence of the sensations, emotions and rhythms perceived by the subject (Nasio, 2008b).

As we saw before, the concept of body image was introduced in the psychoanalytical context by Schilder and was never used by Freud. Psychoanalysts such as Henri Wallon, Buhler, Baldwin and Lacan stressed the importance that the image reflected in the mirror had for the normal development of the child (Nasio, 2008b). But Nasio’s main argument is that the self is composed of two different, thus indivisible, body images: the body image of our body experiences and the specular image that we see in the mirror (or visual image). It is precisely in this context that he will state what he considers the main point of his conception; that “*the Image of the body is the very substance of the self*” (Nasio, 2008b, p. 57).

I have the feeling of being myself when I feel and see my body alive. Feeling our body alive and watching it move in the mirror cause the unparalleled feeling of being myself. I am the body I feel and the body I see. Our self is the intimate idea we forge of our bodies. That means the mental representation of our body experiences (Nasio,

2008a, p. 56 Translation is mine). So, for Nasio “we are not the flesh and bones body, but the body we sense and see” (Nasio, 2008a, p. 57).¹⁶

However, there are two significant aspects to point out: i) the fact that our perceptions are always *modified* or altered perceptions of ourselves, and ii) that our selves are made up of several images we have from ourselves and not from a unique one, not always coherent. These images are amendable; they change and modify, and are very often also contradictory. They are formed out of different experiences that our bodies have:

One day I feel weak because my back hurts; the day after, I feel strong because my body does not concern me anymore; and one day later, I feel old because I discover my first white hair in the mirror [...] there is not only one immutable self, the self is always the interpretation, always personal and affective of what we sense, feel and what we see from our bodies” ...to say it briefly (Nasio, 2008a, pp. 57-58 translation is mine).

On the other hand, these constantly changing images of the body constitute the self and give us a sense of permanence and continuity. Since an illness usually alters that sense of continuity, those experiences that can restore it should be considered a therapeutic potential for rehabilitation.

DMT and MDMT based their practices on multiple disciplines being psychoanalysis one of their big pillars. However, different to traditional streams in psychoanalysis, they emphasized the body movement as the “*via regia*” to get access

¹⁶ “Tengo el sentimiento de ser yo mismo cuando siento y veo mi cuerpo vivo. Sentir que nuestro cuerpo vive y verlo moverse en el espejo me produce un sentimiento incomparable de ser yo. Soy el cuerpo que siento y el cuerpo que veo. Nuestro yo es la idea íntima que nos forjamos de nuestro cuerpo. Es decir la representación mental de nuestras experiencias corporales....para decirlo brevemente” (Nasio 2008a, p. 56, 57)

to the individual, particularly to the unconscious (Fischman, 2008). Through new movement experiences DMT and MDMT will attempt to modify the UIoB. In this line, it is interesting to remark how Nasio states that what is important in a healing process is not just to recall but to *revive or live again* (Nasio, 2008b, p. 49).

Underlying that statement is the plasticity that the UIoB has, as well as its permeability and changing capacity. Nasio (2008b) will state that in a new creative act, we will modify ourselves. In a similar venue, MDMT holds the hope that new experiences created through dance and movement may help a person modify his present and give new meanings to his past.

Environment of care: Dancing at the hospital

The fact that the hospital has offered Argentine tango classes as a form of rehabilitation for PD was seen in a very positive way, even as an “advance” for medicine. This positive view was mainly constructed by patients on perceptions of TP as: i) attempting to improve the patients’ Quality of Life (QoL) as well as an integrated and holistic perspective of patients, and healing, ii) treating people as human beings instead of reducing them to just patients and, iii) providing them with a “place” at the hospital. The three perceptions are important aspects of integrative healthcare, whole person care (WPC) and patient-centered medicine.¹⁷

5.1. Improving patients’ quality of life

Although the patients referred to the idea of QoL at different moments of the interviews, they particularly articulated it when inquired about their perception of the hospital offering this new form of rehabilitation. One of the patients referred to quality of life in a different and creative way by changing the preposition generally used in Spanish language. This person changed the preposition “*de*” to “*en*”, trying to stress the deepness and richness that this program had for her and the rest of the group and what she would like to learn from it: “By offering this kind of programs they are teaching us to improve *in* life” (P II).

The fact that, when cure is not possible, healing still is, is a celebrated approach to progressive diseases. Some authors have even stressed the need to switch the pendulum of medicine towards an approach that always includes the comforting

¹⁷ For Integrative Healthcare see William & Gallagher, 2007; for WPC see Serlin, 2007; for patient centered care see Stewart et al., 2006)

and healing aspects of it instead of restricting them only for the cases wherein cure is not feasible (Spiegel, 2007). For patients, knowing that their physicians go beyond what is expected of them, always looking for ways to improve the patients' lives, was not only extremely appreciated but also reported as providing a strong sense of *safety and confidence in front of adversity*.

[...] you know that you have an illness that will progress and does not have a cure, it progresses, so it is extremely positive to know that your physician is always there, thinking what is the best she can do to help you improve, feel better, live better. It is very positive. It gives you a lot of security (P VI).

When asked how she saw the relationship between dance and medicine, one patient responded:

Dance helps you liberate yourself; when you liberate or free yourself [...] I don't know [you are more relaxed] it helps wellbeing [...] In this process of liberation, you find the possibility of having another perspective, a different healing perspective...one that's more lively! (P II)

Giving a voice was also important:

For me, it is a progress, an advance [...] because it lifts up your spirit [...]

When a person is sick and you make her shut up, or you do not talk to her...or you do not try to find what she likes doing to enjoy herself, whether [it is] knitting, listening to music, reading...it's a problem [...] other hospitals, I know, are now offering "laughter workshops" for people to ease themselves [...] that's also an advance, it's very good. (P III)

The following vignette summarizes and illustrates several of the aspects above mentioned. Tango dancing, a form of art or expression, is an activity that facilitates -at the same time that represents- a comprehensive approach. As such, it fosters the possibility to take care of and to integrate different aspects of life.

They lend us this place where we can dance. Here, we are not a number, we are people, we have this privilege [...] You [as a regular patient] can come from the street; they see you [treat or examine you] and the next day, you leave and nobody knows what happened to you. [...] But for us [tango group], it is different, things converge into a place, they [the neurologists who have proposed the program] don't treat everything separately. (P III)

Most participants appreciated the holistic or comprehensive or integrative approach that portrays the beauty and, probably, the additional benefits of TP. Having the body and the physical exercise at its center, TP still awakes other senses, it involves other realms of people's lives, and it occurs in a way wherein to separate one from the other becomes almost an impossible task. This intrinsic nature of dancing is illustrated in the following vignettes:

TP is very comprehensive; it draws a whole [...] I like the idea that the Hospital offered that [...] One part is physical and another part is spiritual. I believe that when we become sick, we are at risk of becoming sick in different ways, not only the body [...] With tango, there is room for all the senses, the music, the feelings; all the sensual aspects are there in a certain way. (P III)

Another patient simply stated: “I love dancing and it is very comprehensive, it includes everything, it combines a lot of things.” (P IV)

With different words, April (P V) expressed similar feelings. After detailing all the courses and programs they had had at the hospital, such as psychology, singing, kinesiology, eutonia - all workshops she found beneficial since they addressed the physical, emotional, spiritual and relational aspects- she stated: “...all the other workshops are summarized in this course [TP]. For me, it is like a synthesis of the other workshops, this is why I liked it. All what we did separately, I found it in tango...”

5.2. Feeling as “persons”, not as patients

Patients reported feeling as “persons” as a consequence of the hospital offering this tango program. This feeling was based on different ideas such as: a) Being affected by the fact that the neurologists working in the department were always looking for the ways for patients to improve in different domains such as the physical, emotional, relational, and spiritual realms and b) having informal exchanges with the medical staff, an experience that made them feel as “persons” instead of numbers.

“Here, I feel comfortable...very comfortable... everyone comes and says hi, and greets me [...] the other doctor, too. She comes and also says hi... They make me feel a person, not a thing whose name they can even forget [...] here you are a person with a name!” (P III).

The fact that the Neurological service offered this program was also seen as a medical progress, a breakthrough, since “it lifts the spirit”, while providing people with a voice to express themselves through the things they like. The TP can be seen as a way to facilitate people’s ability to recuperate or to actualize their subjectivity while doing a physical rehabilitation, something that dance as a particular form of art may convey. Within all the benefits that arts have for health, some have remarked that we can see “every artistic endeavor as an act of personal re-creation” which permits spirituality and a way of transcendence (Graham-Pole, 2007; Jill; Sonke-Henderson et al., 2007).

5.3. A different relationship with the hospital

After the experience of dancing tango, participants perceived the hospital and the time spent there in a different way. Overall, the experience of attending the TP made patients feel more connected to the hospital, changing their sense of inhabiting it in terms of belonging or having a place for them which was intensely based on pleasurable time. One participant uttered: “We are not passengers or strangers” (P III). In fact, the room (*el cuartito*) where tango classes were held became a significant place for participants, changing the perception about the quality and specificity of the time spent in the hospital. Patients perceived the room that provided them with a lot of fun and pleasure as a place where they also wanted to gather more frequently. They wanted to go back, to spontaneously meet, talk, exchange information, share feelings and support each other, something they actually started doing before or after the classes. The room, perceived as “their room”, was reported as a place where they could arrive earlier, play music, have fun, dance or just “stay

for a while.” “We are not here today, and there tomorrow, that’s important [...] If I arrive early, I turn on the lights, put the chairs in order. I just stay inside and wait for more people...” (P V).

Another participant shared this feeling: “We close the doors and dance...and sing.” “It is a privilege that they lend us that room” (P IV).

One patient reported that she would like to have a place like this for them all the time, always available, where they can come anytime. “It would be great to have a place like this all the time, as anonymous alcoholics do [...] and can go any day of the year [...], because sometimes they have the need to and it is a way of escaping from alcohol and talk to somebody else” (P V).

Having this room for dance classes as a form of rehabilitation, also allowed patients to have a different perception of the time spent at the hospital.

Here, we are not a number, we are people. You can come from the street; they stitch you and the day after, you are discharged. What happened to that person, how is she doing? Things they don’t put together, they treat it as separate compartments but here, we have a privilege, we have that room. We can stay at the hospital, not just enter and leave; we do not just pass by, we are not strangers that nobody else knows about” (P III).

Coming to dance on a regular basis also provided patients with a representation of a place associated with fun and pleasure, a place that can extend itself to hold its participants, and to give room to other needs such as relatedness, communication, exchange of information, or changing mood and emotions. This

turned the place into somewhere they would not only be coming to be assisted, but to actively do something on their own and with the rest of the group.

Participants' interviews analysis suggests that, the fact that Tango classes were proposed by their physician and held at the hospital facilitated or even habilitated them to do something that would otherwise be very complicated to access. One patient stressed that it would have been almost impossible to do it in any other place due to personal, financial and family circumstances. In that sense, the fact that the neurological department organized and held the program was crucial for her and reflected how the hospital, through the service of movement disorders, facilitated the intervention or even made it accessible for patients.

Through the TP, patients perceived the hospital as a receptive, enclosing place that can adjust to their needs. What was transmitted, not only by listening to patients but also by observing them enter, interact and use that room, was the image of the hospital as a dense clay, a surface where someone can slowly imprint his or her own marks, a place that made itself malleable or receptive, changing its own shape as a consequence of the small pressure or molding on its surface. The hospital appeared as a surface that had the plasticity to receive this imprint, the ability to make itself malleable for the patients as opposed to resist or impose its own forms. Work in Patient-Centered Care highlighted the importance of "communication to patients and families, access to information, continuity of care, family involvement, care of the caregivers, care for the community, integrative medicine, spirituality and environment of care, and caring of the caregivers" (Planetree & Picker, 2008a).

The concepts of “environment of care”, “optimal healing environment” or simply “healing environment” have gained some relevance in the last decades. Different authors have insisted that besides the importance of the physical environment -including sights, smells, sounds-, environment of care focuses on the importance that the total atmosphere of the organization has (Frey, 2007; Koospen & Young, 2009; Planetree & Picker, 2008a). Susan Frey (2007), in the endeavor to explain the multiple facets of a healing environment, presents a couple of examples in different health care facilities. Two of them rely on recent findings in multisensory and sensory integration research. The rationale behind is that environmental influences expand to smell, energy fields, sounds, movements and touch. Interesting, most of these elements are part of a dance experience.

But besides all the physical aspects, another way of thinking in an environment of care relies in the attitudes, accommodations and power relations that take place in a health care facility and the kind of connections they permit. For instance, the attitudes and accommodations that a health facility and its workers make around patients’ needs of privacy, dignity, comfort and emotional states should support rather than fragment our lives (Koospen & Young, 2009). Although this may happen in any environment, we should remember that people often enter a hospital feeling anxious and vulnerable, that can be worsened or alleviated through the environment they find (Planetree & Picker, 2008b). Some authors have stressed how the fact that we usually enter a hospital feeling that we have to leave behind part of our identity makes the environment an important space. They argued that in that place the search for meaning is crucial and that may prompt a need for expression,

insight and connection, something that the arts can offer (Jill Sonke-Henderson, 2007; Jill; Sonke-Henderson & Brandman, 2007).

TP seemed to provide a different meaning to the physical and representational aspects of inhabiting the Hospital. Participation in the program indirectly provided a place within the hospital to be appropriate: a place which patients could call “their own.” Thus, it became a space where patients wanted to come back, to gather, to remain after the class and where they felt comfortable and welcomed. In this process, the hospital could be modeled upon their needs of reunion, communication and exchange with others. It was also a place where to spend some informal time with the medical staff. It even became an environment where patients had the chance to gather or congregate with their loved ones, in addition to the possibility to have art and entertainment. But it is possible to assert that in the core of this environment of care, lie “the human interactions that occur within the physical structure to calm, comfort and support those who inhabit it. “Together, the design, aesthetics, and these interactions can transform an institutional, impersonal and alien setting into one that is truly healing” (Planetree & Picker, 2008b).

6. Conclusions

The aim of this work was to understand the benefits and meanings that Argentine tango, a form of partnered dancing, had for people with Parkinson's disease in their healing processes. To do that, the thesis reviewed several theoretical frameworks helpful to comprehend the benefits of using dance as a form of rehabilitation. First, it examined the theoretical foundations of Medical Dance Movement Therapy as presented by Goodill. The concepts she presents –the biopsychosocial model, systems theory, interdisciplinarity, mind/body integration, quality of life and disease/illness differentiation-- were crucial to understand how tango affected the healing process in the people with Parkinson's disease. Similarly, the exploration of the related disciplines permitted to gain significant knowledge about this new modality of rehabilitation which can be understood within the parameters of mind/body medicine, complementary and alternative medicine while sharing strong principles with arts medicine, creative arts therapies, dance and movement and health psychology. Overall, all these concepts led us to think about this practice under the principles of whole person healthcare or integrative health.

Then, the thesis reviewed the philosophical perspectives on the body, particularly the phenomenological perspectives introduced by Merleau-Ponty, a tradition that placed an important role to the body. The concepts of body image, body schema, and bodily awareness and more recently of multisensory integration, permitted to create a framework and to provide philosophical support to the use of dance in rehabilitation. These concepts particularly noticed the plasticity, social component and complex integration of the different representations of the body. The

last theory presented, the motivation theory of flow, allowed us to understand one of the main pillars wherein this practice finds support: enjoyment, pleasure and intrinsic motivation, crucial elements towards adherence to treatment in medicine. In fact, motivation and pleasure proved to be linked to the low-levels of dropouts found in almost all dance rehabilitation programs, making it beneficial when compared to other rehabilitation processes.

This work also presented empirical research that has explored why dance, in its unique blend of physical, emotional, artistic and expressive components, can be used as an innovative tool whether for cardiac, neurological, psychological or motor-skeletal medical conditions. The literature revealed the effectiveness of dance as a valid form of exercise. As it is an inherently fun activity, it proved to have benefits in adherence and continuity in most rehabilitation programs. The fact that dance is performed to music seems to be crucial for rehabilitation. Although not extensively or separately worked in this thesis, music has been identified as a very significant component in all interviews. Indeed, new and prominent research in the area speculates that the combination of music and movement has unique effects in the brain. In addition, the social nature of dance has demonstrated the important effects in social bonds and healing potentials.

Secondly, this thesis presented the results of a fieldwork consisting of six in-depth interviews with Parkinson's disease patients enrolled in an Argentine tango program offered by public hospital, Neurological Department -Abnormal Movements- in Buenos Aires, Argentina. Five themes illustrating the positive perceptions participants had of the program emerged.

A first theme (chapter 3) corresponds to the role of “others” in a process of curing and healing. Through tango, participants found a peer support group that prompted bonding and togetherness, promoting better coping with the disease. This bonding endorsed finding strategies, not seeing the sickness as a torment, changing isolation to openness, and extending social connections. All these perceptions were prompted by the desire of having a flow experience that required non-verbal communication and body awareness. The role played by instructors seemed to be significant and all participants brought into that fact. The analysis of the data allows interpreting that, under certain circumstances, the nature of partnered dance may encompass aspects of “full presence” which, in conjunction with the pleasure and flow that the activity usually produces, might prompt beneficial or restorative outcomes. The physical and artistic nature of dance together with the need of communication that tango requires, provided to significant “others” a double role of “being there” and “being with”, creating a particular context for a process of “coming in resonance” with the body and the self.

Chapter 4 is dedicated to present how the lived experience of dancing tango reshaped the self and it includes 3 themes. The first one is the use of tango as a strategy to apply in daily life. It explains how participants, either in an attempt to overcome difficulties presented by ADL, to find pleasure in rehearsing steps and movement or just because it came as a spontaneous result of listening to music, practiced the tango moves, applied them in different situations and rehearsed mentally between classes. This strategy was useful in ameliorating posture, walking, getting up from a chair, reorganizing rhythms or others and then perceived as a way

of providing a certain degree of freedom. A second theme related to the understanding of the self, focuses on the sense of liberation, connected with embodied feelings of freedom and security. As presented in chapter 1, dance encompasses a lot of physical, emotional, relational, cognitive situations that might have acted as a cosmos wherein to acquire, project and construct experiences that could benefit patients to improve or restore their well-being. Thus, dancing seemed to contribute to offer a path for coping, as opposite of succumbing to the limitations imposed by the illness. In that sense, we can say that dance and partnered dance as non-traditional forms of rehabilitation provided participants with an embodied experience of freedom, security and safety. The last theme included in chapter 4 discusses the importance of recuperating something from the past and its impact on the sense of self. It indicates how the possibility to experiment new body sensations and bodily awareness created through dance and movement might help a person modify his present and give new meanings to his past.

A last theme, “environment of care: dancing at the hospital” (chapter 5), illustrates the impact of offering an art-based intervention regarding perception as patients, the medical institution and the physical environment of care. Tango Program seemed to provide a different meaning to the physical and representational aspects of inhabiting the Hospital. Participation in the program indirectly provided a place within the hospital to be appropriate. In the core of this environment of care, lied the human interactions that occur within the physical structure as well as the integrative approach that this practice held. These findings, based on the experiences lived by patients shed light on the meanings that a non-hegemonic practice, art-based,

had on the patients' healing processes. It also has important ethical implications as it subverts the core assumption that curing and healing powers are nearly exclusively the domain of health care professionals. At the same time it endorses, validates, and illuminates this power for patients and other actors of society. Future research may help understand if similar findings occur when the intervention is not carried out and supported within a medical environment.

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APPENDIX A

Researcher's position

As a clinical psychologist who was born and raised in Buenos Aires, Argentina, where the primacy of psychoanalysis was and still is extraordinary (Lacan's theory in particular), I attended a tradition wherein the body had, up to a certain point, minimal importance in most main-stream psychoanalytical practices and legitimized theories. As fantastically stated by Grosz, "The concept of body image, strongly in psychoanalytic conception of the subjectivity, left the body almost at the point of death." (Grosz 63)

Besides my background in psychology I have danced since an early age, and always thought -or intuitively supported the idea- that the body would not be given its relevance if placed or translated *exclusively* to the stage of a representation. Always interested in the ways in which practices and discourses on the body are constantly shaping the subjectivity, I worked, as a clinical psychologist, in an Obstetric Department. The five years of practice there can be summarized as having a wonderful experience to perceive the body as a text, a surface that can be written by different practices and discourses (Grosz). The distribution of power in medicine and medical environments was always a deep concern and led me towards the studies of gender, educational psychologist and Bioethics.

My love for health, dance and ethics and the idea of keeping a relevant role for the body as the source through which we experience the world were the key points that attracted me to this new field of Medical Dance Movement Therapy as a way of helping others. Following Foucault, I can reflect on the ways in which the body has always been the places where power works but also, and together with pleasure, a main sources of

resistance.

The intertwined, entangled relationship between body and mind, expression and communication, power and resistance, physical movement and pleasure, cannot only be understood but also approached in innovative ways. Interventions and practices involving the body from a broad perspective will definitely affect "the body in its entire subjectivity" (Grosz) and are a wonderful opportunity to create positive outcomes in health.