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A FLUID PERSPECTIVE ON DANCE TRAINING

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1.1. Introduction: On personalised movement

Imagine this:

A one year old girl is sitting on the floor, playing with toys placed in her immediate vicinity, which are one after the other, picked-up, inspected and placed back on the ground. Her mother calls her from the other side of the room showing a new toy which is immediately catching her interest. The baby presses down into the floor, shifts her position to all four and starts crawling towards the toy. When she is close to it, her mother moves further away and lifts it slightly higher from the ground. The infant moves closer to the piece of furniture in her vicinity and uses it to stand up on her feet; she presses her feet into the ground and using the grip of her hands starts moving along the pieces of furniture towards her mother. She lets go of the furniture and takes two shaky steps before being supported by the mother who expresses joy at her child's independent walk. The girl grips the toy, brings it closer to her eyes and examines it, after sitting down on the floor again[1].

Imagine this:

The same girl, who is 10 years old now, will reach up towards the top shelf in the kitchen, looking for a jar of strawberry jam. Earlier that day, she saw her mother putting it there when she returned with groceries. She will press into the ground and raise her heels off the floor in order to become taller, she automatically elongates her spine to gain even more length, her gaze accompanying the extension of the right arm; her fingers will be taking full advantage of the information provided by the haptic sense in order to control the grip on the jar, meanwhile her breath being very calm. As she picked it up, she will carefully take it out of the shelf and bring it down, place it on the table and begin to eat using a spoon.

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[1] Although built on personal experience, this is an adapted version of Annie Brook's text on *Developmental Actions as Pathways of Support*, from *Exploring Body-Mind Centering*, edited by Gill Wright Miller, Pat Ethridge, Kate Tarlow Morgan, 2011, North Atlantic Books, Berkley.

Imagine this:

The same girl, still 10 years old, will now start her first lesson of classical dance. She will learn *port de bras à la cinquième*, lifting her slightly curved right arm in front of her and continuing until the vertical position, above the head. She follows her teacher, who does the same movement, and tries to imitate her posture and grace as good as possible. On the wall in front of her there is a big mirror where she sees that she looks quite different than her teacher. Her feet turned out in a shaky first position, she now has to continue the *port de bras* movement with a *relevé*, which is much harder than expected, repeatedly losing her balance. After the *relevé*, she will place again the heels on the ground, make a *demi-plié*, and stretch the knees while the right arm reaches out with an *allongé*.

With the intention of underlying possible common traits, and therefore apparently similar in their form, the three situations we just imagined are probably more specific and differentiated than we think. In this sense, there are clear parameters that will have a saying in each case, the differences playing a crucial role in how each scenario will unfold.

For instance, in the first example, the configuration of the room where the child is seating is important, and so is the way the furniture is placed, or the height of the mother, or the health level of the infant, or how often is she playing with her mother and father (most likely in different manners), or if she has siblings and how is she interacting with them, and so on.

In the second example, the configuration of the kitchen is important, how high the top shelf is, if the girl grew up in the apartment where the kitchen is, what's the size and weight of the strawberry jam jar, what shoes the girl is wearing, or how often has she done the same action before. The list could continue, the main point here is that **there are very specific traits that will uniquely shape the actions of the girl and the outcome of her endeavour**.

The same could apply for her ballet class, one might ask if she speaks French, or if the teacher translated the meaning of the French terms she is using, if the girl knows that *port de bras* means carrying the arm, *relevé* means rising up, *plié* means bending and *allongé*

means extending, or if she knows when to use the mirror and when not to; has she seen a ballet performance before, does her teacher reminds her of someone, and if yes, then how does she feel about it, did she play sports before, do the movements she is now learning feel foreign to her or somehow familiar? Again, the list of questions and the implications of their answers could extend endlessly. We observe here that the key to assimilating the sensorimotor skills and a successful embodiment of the formal requirements for classical dance (as exemplified in this case), is to be found in **the genetic, biographic and cultural aspects that have shaped the girl from her birth till the moment she started her dancing practice**. It is to be expected that many of the muscles involved in chasing the toy and reaching for the strawberry jam will participate also in the *relevé* movement, the girl automatically recruiting similar kinetic chains, since these are the habitual movement patterns which seem to be fitting for the new task ahead. This might not be entirely valid for her colleague for example, whom let's say is of the same age and of a similar anatomical built, but who's family has had to change work and move from one city to another very often, and who therefore had to change schools very often, as well as colleagues, friends and of course, kitchens. That implies a different set of habitual movement patterns, possibly doubled by specific psychological traits and a characteristic set of skills which would distinctively shape her answers to similar tasks ahead of her and other children, including dancing. However, except in some special occasions, the ballet teacher will teach the same class for both girls (and many others), according to her own method, most probably shaped by other historical methods which align with and maintain the formal integrity.

Imagine this:

The two girls are now 15 years old and are students at a dance high-school or conservatory, after they have trained for 5 years mainly in classical dance technique. They will now have the chance for the first time to take a modern dance class, let's say in Graham Technique. The embodied knowledge acquired up to the moment of this Graham training will unavoidably be recalled and employed, facilitating the navigation of the new set of challenges. This way, kinetic chains habitually employed during classical dance training will readily lend their support, regardless that there are some major differences to the new set of skills to acquire. At the same time, a conceptual and linguistic layering will take place, where similarities between movements will be used in order to smoothen learning and memorising. For instance, what looks like a *port de bras*, a *relevé*, or an

allongé will be neurally layered on top of the *port de bras*, *relevé* and *allongé* learned on their first ballet class and deepened during 5 years of practice, which in their turn have been neurally layered on the bases of habitual childhood movement patterns. Meanwhile, the specific language employed by the Graham teacher will have distinct features, such as *contraction* and *release*, a terminology inherited from her teachers and passed on as a linguistic container of kinetic and metaphoric meanings, which might be, or not, relevant for new students. Further on, there are clear motor skill differences between classical dance and Graham Technique to which the two girls, as new learners, will have to adapt and transform. This is the point where knowledge transfer can be an invaluable tool for adaptation and skill acquisition; meanwhile, coping mechanisms are also going to occur, due to substantial differences in movement patterns and specific formal requirements, and due to time shortage which often places pressure on rapid skill development in a more or less competitive environment, as is often the case in an academic field. And lastly, we should not forget that there are very high chances that the two girls will perceive, adjust and develop very differently from one another when confronted with this new challenge.

What we see here is the inherent need for points of reference, as required by students who want to gain proficiency in dance practices. While my previous examples are related to specific formal types of dance training, my point is more directed towards dynamics of learning movement skills in general. Drawing from the previous examples, one could say that the infant who chased the toy, who reached for the strawberry jam, later on did a port de bras, and who finally approached a class of modern dance, had built kinetic and conceptual knowledge based on previously acquired sensorimotor skills: at home together with her family, later on from her ballet teacher and her colleagues, and so on in a continuous process of layering and filtering, shaped by her developmental processes in interaction with the environment. This points towards the inherent specificity of her development and behaviour, which is already influenced by genetic, biographic and cultural parameters.

1.2. A methodological quest

Using a retrospective view on my own dance education, in tandem with my experiences gained lately as dance teacher, a series of questions have taken shape, prompting me to look for a new perspective in regards to dance training in general. While actively engaged in teaching classical dance, contemporary dance and improvisation, I often faced difficulties both, in regards with **the traditional construction of a dance class** with its conceptual and formal propositions, as well as concerning the challenges of enabling a broader approach that offered **equal opportunities to each person involved** and does not exclusively favour students who are perceived as "gifted". Coming myself from a classical dance-based education, which unequivocally placed accent on learning a specific codified movement language and openly encouraged a competitive environment directed at achieving "perfection" within its formal frame, I had to take into account the transformations needed in order to transition through different formal, artistic or stylistic approaches during my activity as a professional dancer and performer. In this sense, it was relevant for me to acknowledge that as far as I can remember, each time I had to approach a new type of training or choreographic expression, a dual process was happening, where all the new kinetic knowledge was filtered by my initial education in classical dance, coupled with my habitual thought patterns which looked for the shortest way to embody the task at hand. However, later on, when I have commenced my work as free-lance artist, after 17 uninterrupted years of being hired in different state theatre dance companies which provided a daily formal training, I became more inquisitive in regards to my thought and movement patterns, while at the same time, the amount of somatic processes I have used in my practice have become more prominent. That is not to say that I have become a somatic practitioner per-se, rather that **I have started to invest a lot more time in somatically-informed explorations in regards to my proprioceptive activity**, which after a while was clearly reflected in my formal expression and allowed me to further develop my methodology as a dance teacher.

Parallel to this retrospective view and considering the multiple social aspects involved in dance making today, I have decided to investigate what are some of the current tools and perspectives aimed at improving not only dance practices, but also physical activities in general, including sports, physiotherapy, cognitive science or even architecture. In this case, not only pedagogical references seem relevant to me, but also broader, anthropological views are of interest, therefore I have been looking for more complex

methodologies related to dance practices which challenged the habitual unidirectional approach of passing knowledge, and which brought together apparently incompatible areas of expertise; in this sense, I have been searching in the academic and professional environment cases that invited formal and somatic aspects, sport science and improvisation, physiotherapeutic perspectives and anatomical or architectural models, or any variations of the above.

As dance pedagogues, I feel that it is important to acknowledge what needs to be updated and improved, and question ourselves when is it useful to generate and invite transformation into our methodologies. It is important for instance, to acknowledge that some formal dance trainings need an upgrade, one that opens and allows somatic perspectives to flow in, placing the student in a much more engaged and personal stance, where her/his participation is encouraged and nurtured. In the same vein, it is crucial to provide a frame where experiential discovery and improvisational research gives the student enough space to assess, transform and improve her/his habitual movement and thought patterns, which in turn might support the development of a personal and original artistic approach. Also, it is important to acknowledge the latest developments in the areas of physical education and sports, which have greatly benefited from thorough scientific research and financial support, raising the level of knowledge applicable in dance-related contexts and opening new avenues in the area of physical and psychological training, as well as in the areas of prevention and recovery. At the same time, new perspectives have arisen in the areas of architecture and construction with consequences in biology, concerning the advancement of the tensegrity model of construction developed by the architect Richard Buckminster Fuller (1895-1983) and the sculptor Kenneth Duane Snelson (1927-2016). This is now widely employed by many scientists and therapists as a construction, functionality and movement model of the human body, used in fascia-work in conjunction with the habitual skeleton model.

What I am proposing here is a fluid perspective on dance and movement training, which is situated at the confluence between multiple areas of knowledge and expertise, as opposed to remaining confined in a formal or stylistic frame, which may or may not be relevant in a professional context. It is crucial to reach out and dive deep in the pool of knowledge coming from the area of formal dance trainings, however, it is more and more clear that one needs to find a more reliable type of connection with it, one that is based on personal and informed perspectives, which gives room for and facilitates **a mutually agreed embodiment**.

I suggest some points that are the basis of my thesis:

- Formal dance techniques need a conceptual (and at times formal) upgrade
- A fluid type of training is required, which aims more at building versatile performative traits, rather than purely formal motor skills
- Somatic parameters need to be acknowledged and emphasised in formal trainings
- The participants/students need to be actively supported and empowered in being the co-creators of their formal and artistic tools, which will shape their kinetic expression
- Specific contexts require specific formal techniques approaches
- Otherness needs to be acknowledged and nurtured, especially in the context of a formal training

While this perspective might challenge well-established views on dance training and the historical value of formal heritage, it is important to reiterate the experiential nature of dance, which is built on the perspective of a living human, which goes beyond a polar view of its conceptual grounds. A solid historical knowledge is crucial for a better understanding of the dynamics that led to the emergence and development of traditional forms of training, however, reactualisation and reassessment of their background could gain relevance when looked upon with a contemporary perspective, which has the advantage of a retrospective view on its evolution.

This thesis is seen from the pedagogical perspective aimed at academic environments, yet, at times it will also mention or address other areas of practice, being that of professional dance company, hobby dance practitioners or others. In order to give a broader overview on the perspectives which are shaping this thesis, some relevant areas of expertise will be briefly presented. This will address the field of infant development, gravity, the theory of embodied cognition, tensegrity model, somatics, the philosophical, anthropological and therapeutic perspective of Thomas Hanna (1928-1990, the person who coined the term somatics; his work will be addressed on page 40), and others. It also contains personal pedagogical considerations, as well as a case-study which covers a series of dance classes taught for the bachelor students at the Institute of Dance Arts at Bruckner University in Linz.

I have substantiated my main ideas with literature by scholars and practitioners which in general have a mixed background, combining dance practice or theory with academic knowledge. This includes Judie Brodie and her views on somatics in dance, Jenny Coogan and her principles which shaped her somatic-based project at Palucca University in Dresden, Donna Krasnow and her considerations on motor learning in dance, Glenna Batson and her neurological perspective on dance, Hubert Godard and his work based on gravity awareness, Maxine Sheets-Johnstone in the field of phenomenology and infant apprenticeship, Graham Scarr in the field of biotensegrity[2], and others.

[2] See Table of contents for more bibliographical information , page 80.

1.3. Formal and Somatic

In some cases, formal dance trainings have a long history, often coupled with the wish of their practitioners to encode and systematise its vocabulary for methodological and pedagogical purposes, providing the field with invaluable information and expertise. In this sense, the classical dance technique is one of the oldest forms to have been systematised and framed in an academic context, and in spite of its many styles and methods, it is still probably one of the most consequent in regards to its vocabulary and *motoric identity*[3]. More than that, in spite of major conceptual and formal differences, it is arguably the most influent in shaping some of the most important modern dance techniques, including Graham Technique and Cunningham Technique. While each of them uses a different vocabulary and terminology, and each of them is covering a specific range of physical expression, dynamics and use of space, the one thing they do have in common is that they each have a very clear set of formal requirements in regards to how one should execute their movements, which is actively employed when devising pedagogical strategies and methodologies.

On the other hand, somewhere in the beginning of the last century, and possibly directly connected with the rise of modern dance and Ausdruckstanz, the search for alternatives to ballet performances and its formally framed movement vocabulary saw the development of different forms of movement practice. In other cases, a concern with one's health and appearance, and probably also in connection with developments in the area of psychology, gave the impulse to develop new forms of physical therapies and practice. Some of these were directed at the indiscriminate development of public health, others were concerned with a more informal approach to movement and free from encoded frames. Some were physical therapies, and others were looking for a more holistic approach, a practice where what one feels and thinks is receiving the same amount of attention as to how one looks-like while doing it. This was the time of Isadora Duncan, Rudolf von Laban, Mary Wigman, Bess Mensendieck, but also the time of Sigmund Freud, Edmund Husserl, John Dewey, and of Elsa Gindler, Frederick Matthias Alexander, Émile Jaques-Dalcroze and others. That paved the way for many interdisciplinary developments, which later on led to the rise of somatic techniques, both in the therapeutic field as well as an artistic practice. In time, these practices found their way in the field of dance and choreographic processes, and that is how new training

[3] As coined by Claudia Jeschke, in her Movement Research studies with Master students of Institute for Dance Arts at Anton Bruckner University in Linz.

methodologies emerged, which were looking for means of placing emphasis on *postural and movement evaluation, communication and guidance through touch and words, experiential anatomy and imagery, and the patterning of new movement choices-also referred to as movement patterning, movement re-education or movement re-patterning*[4]. This was unfolding at the same time with major historical shifts which have influenced the field of dance, such as the rise of post-modernism or the development of the concept of embodied cognition, which opposed the Cartesian view of a split between mind and body.

When placing formal dance trainings and somatic practices side by side and comparing them, two major perspectives emerge[5]. The formal dance practices are placing emphasis on a **pre-established vocabulary of movements**, backed by aesthetic expectations which will inform and dictate their methodologies. The somatic techniques are placing the processes of **awareness, self-evaluation and experiential discovery**, at the centre of their practices. If we were to use a simplifying perspective, we could say that formal dance techniques are proposing an external model to be accomplished by the practitioner, while somatics are proposing to start from what the practitioner feels and attempt to generate their external appearance by controlling the internal realm, shortly put, we have a case of OUT towards IN, versus IN towards OUT. This perspective is not aimed only at observing a polar dynamic, its intention is actually directed at establishing a point of view which might lead to methodological developments, therefore my quest is to observe and assess differences as well as common points. While some of these considerations have already found their way in my pedagogical practice, others were more clearly expressed in literature which was looking for similar cross-border approaches.

Julie Brodie[6] notes that *directing attention to breathing, sensing, connecting and initiating enables the body to take full advantage of its own innate knowledge* (Brodie 2012, p.8). The interconnection between **breath** and emotional and/or physical states is working bidirectional; any change in breath will be reflected in the body and/or emotional state,

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[4] *A brief history of somatic practices and dance: historical development of the field of somatic education and its relationship to dance*, Eddy, M., 2009, Journal of dance and somatic practices, Volume 1, Number 1, retrieved 16.03.2019.

[5] This is a generalisation which levels-out major differences in within each compared area. However, the intention here is to push the argument further in order to make a different point.

[6] *Dance and Somatics: Mind-Body Principles of Teaching and Performance*, Brodie, A.J., 2012, McFarland and Company, North Carolina.

and vice-versa. At the same time, controlling the breath can be a vital tool for dancers, especially in helping them connect with their core and in finding the flow of movement (Brodie 2012, p.8). Concerning **sensing**, Brodie emphasises the importance of the connection between the exteroceptive (vision, hearing, touch and smell) and the proprioceptive systems, as providers of information necessary for accurate and appropriate reaction to stimuli, while at the same time differentiating between the uses of each of them in dance practices (Brodie 2012, p.8). For instance, she is mentioning the over-reliance of dance students on visual information acquired from the mirror *to detect and correct errors in their movement skill performance*, when actually *the visual system should really be used to navigate and negotiate space, people and objects in the environment* (Brodie 2012, p.9). She continues by acknowledging the importance of **connectivity**, both within the body and into the ground, and she considers the developmental patterns (which support human progression from birth to maturity) together with the ability to *navigate the pull of gravity* as integrating parts of the approaches to connectivity (Fiorentino 1981; Haywood and Gretchell 2009; Mills and Bainbridge-Cohen 1990; Brodie 2012, p.10). *Connectivity implies understanding, on a kinetic level, the forces acting on the body and the body's structural potential to resist, yield, or amplify these forces in movement* (Bartenieff and Lewis 1980; Hackney 1998; Hamill and Knutzen 1995; Brodie 2012, p.9). What is also implied here, is the ability to observe, acknowledge and control these forces, which is asking for the use of specific tools and practices, different than **only** formal dance training, Brodie giving the examples of Alexander Technique, Ideokinesis, Bartenieff Fundamentals, Pilates and Body-Mind Centering as such practices. When it comes to **initiation**, she connects the focused knowledge of where the movement is initiated to completing the chosen kinetic chain (sequencing), leading to *greater biomechanical efficiency*, and a *heightened sense of expressive capacity,* which can benefit from motor learning and development concepts as conceptual framework, while employing somatic techniques (Brodie 2012, p.10).

Although using a different angle and vocabulary, Jenny Coogan[7] is touching on similar aspects when presenting the concepts within the Feldenkrais Method, which she used in a contemporary dance training context. Quoting Feldenkrais, she sees **awareness** as ***consciousness*** *combined with the realisation of what's happening within it or what is going on within ourselves while we are conscious* (Feldenkrais 1972; Coogan 2016, p.24).

[7] *Practicing dance: a somatic orientation*, Coogan, J., 2016, Logos, Berlin.

Feldenkrais gives the revealing example of leaving and returning home, yet not being aware of the number of steps on the stairs, while Coogan sees the ability to pause between the thought patterns connected to a particular action and the execution of that action as the *physical basis for awareness* (Coogan 2016, p.24). These two aspects, awareness and consciousness, give the individual the chance to acknowledge that *one's movement in the world is not predetermined, but needs to be discovered, self-formed and created through the potential of acting on one's intentions* (Coogan 2016, p.24). We can see here how awareness can provide and enormous potential when it gets habitually engaged not only on stage, but also as a regular tool of practice and training. This is probably in direct connection with the notion of "presence", as it is used in performative practices, where the performer is perceived (or not) as someone who is clearly rooted in the inhabited space and time. The next concept, which recognises the possibility of choice in one's action, is the **self-regulation**; acknowledging that *alternatives for action and decision-making in relation to the situational environment* is what leads to the ability to justify argumentatively the choices for action (Coogan 2016, p.24). The self-regulation is in this context the provider for *unique patterns of action in accordance with self-determined goals*, with the help of internal processes such as: *posing questions, making informed decisions, expressing needs, handling oneself with critical reflection, accepting the consequences resulting from one's independent actions, following interests in accordance with the context and in reflective alignment with the interests of the others* (Stintson 2000; Green 2000; Brodie, Lobel 2007; Coogan 2012, p.24). According to Coogan, self-regulation processes lead the individual to *access their potential for agency and self-reflection*, where **agency** refers to one's ability to initiate and handle things *with the consciousness of volition*, while **self-reflection** is understood as the somatically informed and consciously directed action, in tune with *one's biological ability to self-regulate and self-organise* (Gallagher 2005; Coogan 2016, p.24,25). Here again, she quotes Feldenkrais: *when you know what you are doing, you can do what you want* (Feldenkrais 1984; Coogan 2016, p.25).

As last, Coogan mentions **embodiment** and **situated cognition**, which observe that *one is physically integrated with the world*, building on the work of Francisco Varela, Evan Thompson and Eleanor Rosch who viewed cognition as *grounded in the sensory-motor dynamics of the interactions that occur between a living organism and its environment* (Coogan 2016, p.25). This is stated in their enaction theory, developed in continuation of the work of Varela and Umberto Maturana who formulated the concept of *autopoiesis* in

the 1980's. We can see here the common grounds of enaction and somatic perspectives (for example that of Thomas Hanna, more on page 40), asserting that *a person's particular body image and the shape(s) into which their body grows and changes* is the result of social exchange and interaction with the environment (Coogan 2016, p.25). The common traits of self-reflection, autonomy and embodiment, combined with sense-making and inter-subjective interaction, of both the enaction theory and *the somatic appreciation of dance practice and performance*, are some of the reasons why they resonate with each other (Warburton 2011; Coogan 2016, p.25).

Both, Julie Brodie and Jenny Coogan are concerned with finding links between dance, somatics and neurological knowledge, attempting to frame and ground conceptually the movement practices, looking to acknowledge the importance of informed choices, agency and an empowered perspective on dance studies which aims to shift responsibility and awareness towards the students. This leads me to question the bases of learning in general, and attempt to better understand the dynamics at work when acquiring new information through a developmental perspective. If we imagine that the little girl mentioned in the beginning of this work is now maybe a dance teacher, and tries to understand how best to take advantage of her explicit and implicit knowledge in addressing dance training, most probably a retrospective view on her childhood and subsequently her dance career would be relevant sources.

2.1. Development: Infant apprenticeship

Maxine Sheets-Johnstone[8] makes the case for an *ontogenetically-informed epistemology*, which is taking a closer look at the first 12-18 months of every infant's life, the time *we were all first and foremost apprentices of our own bodies,* a *corporeal-kinetic apprenticeship* which is in tandem with gaining *understanding of the bodies and movement of the others* (Sheets-Johnstone 2000, p.343,344). Pointing out the human anatomical and physiological affordances, *eyes that move, heads that turn, bodies that move toward and away from other bodies and objects in a surrounding world*, she underlines the presence of a *kinetic spontaneity"*that contains a sense of *motivation, agency, a species-specific range of movement possibilities and a repertoire of "I cans"* (Sheets-Johnstone 1998, 1999, 2000, p.344,345). Acknowledging the *fundamental power of animate forms to initiate movement*, she goes on to name **joint attention**, **imitation** and **turn-taking** as instrumental in acquiring kinetic knowledge and behaviour patterns by infants, whom, she suggests, when as young as 6-22 weeks are responsive to movements in their environment, and they learn about *relationships between objects by observing the effects of movement and actions done by themselves and other persons* (Bloom 1993, Sheets-Johnstone 2000, p.345,346). She describes **joint attention** as *the capacity of infants to follow the gaze of their mothers or caretakers and to rest on a commonly perceived visual object* (p.346,347), and as developmental phenomena linked with the acquisition of language, the concept of oneself and others as agents, and of cultural behaviours that are related to a specific community, which can be seen as grounding social practice. According to Sheets-Johnstone (quoting Meltzoff and Moore 1983) the ability to **imitate** is present at birth, and she goes on to suggest that it is built on *the basis of essentially kinetic imitational capacities* which are building on the *realisation of a correspondence between one's body and that of a model's*, therefore solidifying habitual imitative phenomena reflected in *familial overtones and cultural imprints*; she points out the individual significance this could build to, when *personal innovations arise in the context of imitation, and personal habits are a form of imitation,* which renders imitation not only as *senseless copying* but as a tool which might possibly help to deviate from the common practice (Sheets-Johnstone 2000, p.353,354,359).

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[8] *Kinetic Tactile-Kinesthetic Bodies: Ontogenetical Foundations of Apprenticeship Learning*, Sheets-Johnstone, M., 2000, Human Studies 23, Kluwer Academic Publishers, academia.edu, retrieved 25.03.2019.

Generally seen as the precursor of language, where a child is vocalising back at her parents and builds-up to the ability to talk, but also as the *cardinal rule for all later discourse between two people*, **turn-taking** is widely employed in schools, as *ritualised turn-taking* (p.362), where a teacher lays out the rules and the students will comply, or in any other activity that uses rule-following and specific procedures to be observed. Sheets-Johnstone places emphasis on the intersubjective significance of the act of turn-taking, acknowledging that the ritual turn-taking as employed in schools is more concerned with *learning facts and following instructions, not in the service of developing talent, for example*, which is quite different from the turn-taking between an infant and her mother or caretaker, which is an *affective happening* (p.363). In general, she is stressing the need to take the time of infancy a lot more seriously as the period of ongoing apprenticeship, in which while we are developing kinetic abilities, we are also developing *certain abilities and certain nonlinguistic corporeal concepts fundamental to learning much later adult skills* (p.356).

Apart of its informative insights in regards to an ontologically-informed epistemology, which could reshape one's dance pedagogical methods by taking into account developmental aspects, there is a second perspective that opens the space for acknowledging and questioning the presence of parameters already existing in dance, related to joint attention, imitation and turn-taking. These parameters will be more broadly analysed and filtered, by taking a closer look at some of the alternative perspectives which are already present in the field of dance practices, as well in some other fields of research and practice, as seen possibly relevant for the task at hand. But before that, let's take a closer look at some important milestones occurring during infant development.

2.2. Infant development

Several factors can come together in shaping the development and appearance of a human being, one can mention here the genetic legacy, the environment, or the cultural context, and all these elements provide specific interaction opportunities from birth till death. Through this perspective, one needs to acknowledge the singularity and uniqueness of each person, as a result of its developmental trajectory. There are 7 distinct areas which can differentiate the ability to learn and develop normally, according to Charles Mike Rios (MD)[9]: **language**, **visual-spatial**, **social**, **memory**, **motor/sensory**, **attention** and **mood**. Each of these areas has its own specific contribution but also its specific challenges, which are coupled with the previously observed parameters (genetic, cultural, environment) ensuring the uniqueness of each individual.

Paediatricians are observing the normal trajectory of infant developmental milestones, which is divided in 4 categories: **social** (how a baby reacts to human face and voice), **language** (receptive language development), **large motor development** (some examples are sitting, pulling, holding their head up, walking) and **small motor development** (eye-hand coordination, reaching, grasping, manipulating objects)[10]. Each of these categories are represented in the infant developmental milestones and they are having an approximate time-frame of occurrence. I will give some example concerning the motor skills[11]:

- Until 3 months old: while being on the stomach lifting and holding the head, open and close fists, follow moving objects with the eyes;
- 4 to 7 months old: using hands to support self while sitting, rolling over both ways (stomach, back), reaches for objects with one hand, transfers objects from one hand to the other, accepts weight on the legs when standing with support;
- 7 to 9 months old: sits without support, crawling with alternate leg and arm movement, turns head to visually track objects;
- 10 to 12 months old: pulls to stand and cruises along furniture, stands alone and takes several independent steps, maintains balance in sitting when showing objects;
- 13 to 18 months old: walks independently, squats to pick-up a toy (Mersch, Shiel).

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[9] *Developmental differences in children*, Rios,C.M., 2010, developmentalpedriaticstexas.com, retrieved 25.11.2018.

[10] itsamomsworld.com, quoting from *Wongs Nursing Care of Infants and Children*, Wong, D.L., 2003, retrieved 20.03.2019.

[11] *Infant milestones*, Mersch,J. MD, Shiel, W.C. MD, emedicinehealth.com, retrieved 20.03.2019.

It is interesting to observe how each new skill is built upon the previous one, in a continuous sensorimotor investment in dealing with the effects of gravity, and I will reiterate here the importance and influence of the environment and cultural context, combined with the genetic legacy. Most of the actions described earlier are in connection with the interactive parameters set also by (amongst others) the spatial context (for example the layout of the furniture in the room, the size of the bed), familial interaction (how fit or active are the parents, the existence of siblings, choices of toys) as well as many other factors, eventually leading to the acquisition of habitual patterns. This development is based on experiential discovery, where the ongoing embodiment will literally shape the infant in a specific, individual manner, which together with social and linguistic interactions will influence the sub-sequential acquisition of behavioural patterns. As Feldenkrais points out[12], *every pattern of action that has become fully assimilated will interfere with the patterns of subsequent actions* (Feldenkrais 1972, p.20).
Donna Krasnow mentions[13] Esther Thelen (1941-2004), a developmental psychologist who focused her research in the field of motor learning, eye-hand coordination and reaching. Her observations led to the idea that *development is individual, and each infant experiments and selects personal strategies regarding locomotion* (Krasnow 2015, p.62). In one of her studies, Thelen investigated for several months the effects on 1 month-old infants of having their feet placed on a moving belt (treadmill), while supported by an adult. The results of this study showed that the treadmill acted as a stimulus for the infants, *assembling walking behaviour* which was otherwise not present (p.62). We observe here a clear instance where the environmental context is stimulating the acquisition of sensorimotor skills. The American philosopher and scientist Edward Reed (1954-1997)[14] pointed out that the movement of organisms takes place in a context, *never in a vacuum, but always part of the complex interactions that allow the life and survival of the organism* (Newton 1995, p.34). Fast forward 10, 15, or 30 years and we can imagine how these habitual movement patterns acquired in specific environmental linkage, are going to contribute to one's specific sensorimotor development. We can see how preferences in approaching physical tasks (including dance practices) will further-on build a very particular type of repertory of actions, filtered by a specific perceptual range.

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[12] *Awareness through movement: Easy-to-do exercises to improve your posture, vision, imagination and personal awareness*, Feldenkrais, M., 1972,1977, HarperCollins, New York.

[13] *Motor learning and control for dance: principles and practices for performers and teachers*, Krasnow, D.H., 2015, Human Kinetics, Illinois

[14] *Basic concepts in the theory of Hubert Godard*, Newton, A.C., 1995, Rolf Lines, alinenewton.com, retrieved 20.03.2019.

Feldenkrais talks about *self-image*, the limited sensory awareness covering only aware processes and body parts which a human being uses frequently, while there is lack of awareness for other parts which are *mute or dull* (Feldenkrais 1972, p.21), and we find a similar idea in the work of Thomas Hanna, who calls this *habituated state of forgetfulness, sensory-motor amnesia (SMA)*[15] (Hanna 1988, p.xiii). Feldenkrais stresses the importance of the environment in shaping the acquisition of human movement patterns, which in turn can lead to habitual limitations, usually considered to be natural by each person (Feldenkrais 1972, p.23). This way, a person builds a *self-image* relating to her/his possibilities and range of physical expression, which is often inaccurate and also very difficult to change. He makes his point clearer by using the metaphor of *correcting playing on an instrument that is not properly tuned* (p.24). He finds awareness to be the right tool for *systematic correction of the image*, which will be more efficient than *the correction of single actions* (p.23)

Donna Krasnow defines postural control as *the ability of the body to oppose gravity and balance moment by moment,* which in motor behaviour is defined as *the ability to acquire, maintain, or regain a state of balance during physical activity* (Krasnow 2015, p.34). In dance practices, she distinguishes postural control from alignment, which she sees as *a particular linear organisation of the body parts with respect to gravity and dance aesthetic*, as these terms are often used interchangeably by dancers or teachers. In her view, a good alignment *encourages efficiency-less muscular effort to achieve the task at hand* and *creates a sustainable dance practice,* while a body can have *well-developed postural control and balance but have poor alignment* (p.35). This is what Hubert Godard calls extrinsic posture, a concept which will be widely presented later on and which refers to a postural stance that makes excessive use of groups of muscles, usually not responsible for a correct alignment that observes gravity. These are very fine distinctions which are often escaping the attention and awareness of dance practitioners, yet they have crucial importance on many levels. The ability to observe postural inconsistencies requires a certain level of anatomical, physiological and bio-mechanical knowledge, which are rarely part of a dance education curriculum and are seen to have a secondary value as methodological tools. It is often the case that dance teachers will sacrifice good alignment, trading it for postural adjustments that will get their students closer to formal proficiency; as if the **ideal body**, as envisioned by formal expectations, is attempting to transform and reshape the body of the actual, living and present dance student, ignoring

[15] *Somatics-Reawakening the mind's control of movement, flexibility and health*, Hanna, T. 1988, Da Capo Press.

her/his specificity and personal built. This ideal body (informed by the aesthetic proposition of its inception and which has also shaped its methodology) is going to generate particular formal expectations, which one has to go at great lengths to embody, while at the same time disconnect (or outright reject) personal features which are perceived as wrong and not in-line with the formal requirements. This way, a parallel action of dis-embodiment might take place (often unnoticed) which will strongly undermine one's own image, leading to disempowerment and lack of self-trust.

Logistic considerations often impede a profound and correct assessment of dance students' alignment, or of their habitual physical coping mechanisms and compensation patterns, except for major, obvious disturbances or malformations. Of course, there are (sometimes major) differences between dance schools related to specific styles or dance techniques, which lead to different strategies for assessing and selecting dance students, often involving thorough medical examinations. However, it is expectable that a person who will start taking dance lessons will never have a perfectly aligned body, and will always have some kind of habitual, yet unaware postural adjustments, which will most certainly affect the ability to achieve a "clean" postural control. Adding to that the student's genetic heritage, anatomical construction, cultural background, preferences for physical activities in general, long-term postural restrictions (sitting at school for example), and we realise how much unaccounted for (or too little) information plays an important role in approaching, learning and practicing dance, even before starting the actual dance education.

When dealing with formal dance trainings, it becomes even more complex. In this case, a teacher will be mainly concerned with correcting the student within the formal frame, therefore the adjustments have strong chances to stay in a formal realm, rather than pointing to fundamental structural and functional parameters. The lack of a profound assessment and effective acquisition of structural control might lead to an "exterior" approach of the movements, as if one would attempt to mirror the teacher, or as if by only replicating the appearances of a movement would be enough to achieve formal expertise and control. Therefore, there is always the danger of adding physical coping mechanisms and compensation habits, under the pressure of having to achieve the specific kinetic synergies of the vocabulary of movements contained in the chosen formal realm, which are favouring certain movement patterns or groups of muscles.

This strategy can prove not only unstable and superficial when put to the test, it can also become dangerous for one's health, since the acquired motor skills do not have a solid

structural base, a structure in which one has clearly understood the specific underlying sensorimotor processes, and even more, a structure which one has **thoroughly and profoundly contributed to build and improve.**

At this point, I believe it is important to bring gravity to our attention, as one of the ever-present influences in human development and, of course in dance practices. I will present some lines of thought and practices which I think are relevant for our topic.

2.3. Gravity

The same gestural form-for example an arabesque-may be charged with different significations depending on the quality of movement, which goes through considerable variations even as the form presents. It is the premovement that determines the body's state of tension and that defines the quality, the specific colour of each gesture. It acts upon the gravitational organisation, that is, on the way in which the subject organises her posture to stand up and respond to the laws of gravity in this position (Hubert Godard)[16]

While often forgotten, gravity has a direct and undeniable influence on posture and movement occurrences, a constant force which shapes the human kinetic realm. The French dancer and movement teacher Hubert Godard points out the inescapable effect of gravity, which manifests in a way a person moves, and even before that, when a person is only standing (Bolens 2012, p.21). We see here conceptual similarities with the *little dance* practice of Steve Paxton, where a dancer has to observe the constant adjustments of the body while standing and having the eyes closed, or with the text of Jean Cébron (1927-2019), a French choreographer and teacher, pointing at the energetic investment one has to do in order to overcome the pull of gravity.[17]
The neurologist Erwin Strauss (1891-1975) underlines the influence of the environment on human beings: *men and mice do not have the same environment even if they share the same room…. The surrounding world is determined by the organisation of the species in a process of selecting what is relevant to the function cycle of action and reaction…. Upright posture pre-establishes a definite attitude toward the world; it is a specific mode of being-in-the-world* (Newton 1995, p.35)[18]. Judith Kestenberg (1910-1999), a child psychiatrist who was also trained in Laban movement applying its parameters to study developmental psychology, touches as well on the coupling of environment and gravity: *For each of us, the history of our own coming into uprightness is inevitably linked with the relationship with the environment around us, including the people, our parents, who are part of it; and all of this is written into our basic postures and stance in gravity* (Newton

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[16] *The style of gestures: embodiment and cognition in literary narrative*. Bolens, G., 2012, Johns Hopkins University Press, Maryland, p.21.

[17] "Um sich zu bewegen muß diese Kraft [Gravity] durch Energie überwunden werden" *Das Wesen der Bewegung: Studienmaterial nach der Theorie von Rudolf von Laban*, Cébron, J. - From: *Eine Choreographie entsteht, Das kalte Gloria*, Dietrich, U., 1990, Die Blaue Eule, Essen, p.73.

[18] *Basic concepts in the theory of Hubert Godard*, Newton, A.C., Rolf Lines, March 1995, alinenewton.com, retrieved 20.03.2019

1995, p.36). She relates this with the process of separation between the mother and the child, where **the child needs to perceive the effects of gravity, and needs to develop autonomy and fundamental movement patterns of tension and release** : o*nly when self and object can be recognised as separated in space, can there be communication instead of communion* (Newton 1995, p.36). Kestenberg is pointing to the importance of mother-child physical interaction not only from a kinetic perspective which influences the development of movement patterns, but also as a generator for psychological patterns, where for instance the way the mother will hold the child, or how she will move while holding it, will become a deeply rooted *personal psychological pattern* (p.36).

A notable example of a dance practice which is based on the shared awareness of the effects of gravity on moving bodies, is Contact Improvisation (CI). Initiated in 1972 by Steve Paxton, an American dancer and choreographer, it has quickly become an internationally spread practice[19]. The experiential nature of Contact Improvisation allows its practitioners to communicate, negotiate and attain proficiency at navigating the challenges of discovering the least use of muscular tension and the most efficient ways to share control, and it is probably best described by the performer and teacher Ray Chung who sees CI as *an open-ended exploration of the kinaesthetic possibilities of bodies moving through contact*[20]. Possibly the most appealing feature of CI, which is practiced not only by dancers but also by movement lovers in general, is that it does not require previous formal knowledge. It is based on exploration and discovery, in which case the interaction generates outcomes that are impossible to foresee, yet its effects are informative and empowering. The practice may be revealing of one's habitual movement patterns, it encourages and uses awareness for self-adaptive processes, it enhances the ability of conscious selection of kinetic information required to attend to a moving partner, it develops spatial awareness in regards to self, others and the environment, and it can help its practitioners to acknowledge and improve the recruitment of kinetic chains when navigating gravity.

[19] *About Contact Improvisation*, contactquarterly.com, retrieved 12.04.2019.

[20] *About Contact Improvisation*, contactquarterly.com, retrieved 12.04.2019.

Nancy Stark Smith and Alan Ptashek
Photo by Erich Franz[21]

We observe a similar approach in the theoretical aspects of Hubert Godard's work applied in his workshops, where he tries to offer a context, rather than isolated movement patterns. He mentions the metaphorical (yet relevant) aspect of a simple action which can reveal not only the lack of a well-organised physical pattern, but also its possible psychological readings, although this is not his main focus but more a secondary effect: *For example, if I ask a client to push me, I can see if one direction is lost during the action, if she is pushing herself (contracting or shortening) rather than actually pushing me (moving herself away from me rather than me away from her), or if she loses her own centre in the push, going with me in the push, not actually separating. The movement of pushing is symbolic of saying no* (Newton 1995, p.40). He is giving other examples of actions that can relate to the psychological abilities to make contact and to separate: *to throw, to cut, to show (point), to welcome* (p.40).
In its therapeutical work, Body-Mind Centering is also showing interest (and did extensive research) in how babies and toddlers are developing their motor abilities in interaction

[21] Contact Improvisation, web search, retrieved 13.04.2019

with gravity. Bonnie Bainbridge-Cohen[22], the founder of Body-Mind Centering, defined 5 actions observed in how babies "handle" gravity when being interested in external stimuli, being that a toy which they wish to acquire, or a person with which they wish to have contact: ***yielding, pushing, reaching, taking hold*** and ***pulling***. These actions are sequential, starting with *yielding*, which is the action of tonic contact between the ground and the body parts which are in contact with it, *pushing* into the ground is the action required to *reach* towards the point of interest, *taking hold* is the action of grabbing, and *pulling* closer the object or the person of interest is the achievement of this sequence which can be started again if a new point of interest arises. According to Annie Brook, a Body-Mind Centering practitioner and therapist, this *developmental action sequence* has a crucial importance in attaining pleasure from the ability to have support to reach for what one desires and to actually get it, and it requires an organic and reliable construction (Brook 2011, p.47)[23]. Since this is used as a developmental integration in therapeutic practices, she points out to instances when this sequence is not properly attained during childhood, leading to gaps which will manifest on physical level (inability to push or pull properly) and as emotional or psychological gaps, impacting the ability to attain satisfaction. Brook gives the example of a man whom as an infant, having a two years older brother, had *the experience of getting his hands on something, only to have it immediately pulled away by his brother* on regular bases, which resulted in a *low-grade lethargy* in *going for what he wanted* as an adult (p.49).

Coming back to Hubert Godard, we should mention his concept of *tonic function*, referring to the postural response to gravity, which sees the two directions ("grounded" towards the floor and "reaching" towards the sky) as central to understanding movement and the body's orientation to both, weight and space[24]. He builds on the division between tonic muscles, which are *primarily involved in maintaining the body's upright stance* and phasic muscles, *the ones we use for large motor movement and short, intense activity* (Newton 1995, p.37). Vladimir Janda (1928-2002), a Czech physician and physical therapist who identified the tonic and phasic functional groups of muscles, developed "the Janda approach" which states that **at the source of movement dysfunction is the**

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[22] Bonnie Bainbridge Cohen (born in 1941), an American movement artist, researcher, educator and therapist, the developer of Body-Mind Centering,an integrated and embodied approach to movement, the body and consciousness (bodymindcentering.com, retrieved 21.05.2019).

[23] *Exploring Body-Mind Centering: An Anthology of Experience and Method*, Brook, A., edited by Miller, G.W., Ethridge, P., Morgan, K.T., 2011, Berkley.

[24] resourcesinmovement.com, quoting from Contact quarterly, interview by Carin McHose, retrieved 21.03.2019.

systematic and predictable imbalanced muscle tone[25]. Interesting to note that *tonic muscles are flexors and are developed in utero, in the foetal position, when the body is flexed into itself*, while *phasic muscles are extensors that develop after birth* (Wikipedia). At the same time, the tonic muscles *have a higher proportion of fascia* and are *densely spindled* which *makes them an important sensory tool* by sending information to the central nervous system, helping the brain *to set the tone of other muscles* (Newton 1995, p.37). Since the phasic muscles cannot work if the postural (tonic) muscles don't release, *it is the subtlety of the tonic muscles and their ability to contract and release appropriately that allow the coordination to take place* (p.37).

Godard points out that oftentimes, in spite of looking well aligned, it is common that some people are actually using **extrinsic** (phasic) muscles to maintain their alignment, meaning that they are not in tune with the gravity pull in the best way for their bodies but according to an image that they think and feel is right. He also mentions that the best way for him to approach these people from a movement-therapy perspective, is to get them to relay mainly on their **intrinsic** (tonic) muscles which are closest to the central line (gravitational): *if someone is moving only from the extrinsic side of the body, structurally they may look well organised, but if you are used to reading movement, there is no motility, by which I mean movement coming from the core, coming from the central line* (Newton 1992, p.43)[26].

We can observe this as well in dance pedagogical contexts. The complexity of formal training, which has a long methodological history covering multiple aspects and differentiations giving its specific identity, will prove to be challenging for young students with limited experience in developing motor skills. It is often this age-mismatch between the young student and a historical methodology which is going to trigger unwanted physical coping mechanisms, with negative effects on alignment and movement patterns, and which will elicit an unbalanced distribution of forces in the body, often unaddressed or overlooked. The formal requirements of the chosen dance practice will place a physical and psychological pressure which will affect very differently dance students, who already have their own specific corporeal identity, resulted from their genetical, biographical and cultural background. In this sense, it is enough to observe how different a group of students from the same class and of the same age will be in their appearance, anatomical construction, muscles distribution, motility, ability to memorise, etc, even in contexts

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[25] Vladimir Janda, Wikipedia, retrieved 21.03.2019.

[26] *An interview with Hubert Godard*, Newton, A., Rolf lines, Winter, 1992.

where there is a very particular type of selection, such is the case for example, of the Paris Opera Dance School.

Students of the Paris Opera Dance School

Photos by Francette Levieux[27]

[27] *Ecole de Danse*, operadeparis.fr, retrieved 13.04.2019.

In my own experience as teacher, this **extrinsic posture** is probably the biggest challenge to address, both in classical and contemporary dance trainings. Usually, this is the product of specific genetic and biographic aspects of each person, mixed with formal challenges coming from each practice. In people that have practiced dance for some time, this can be visible in how certain chains of muscles are distributed on their bodies, or how certain joints are being employed, revealing habitual approaches connected with these challenges. The multiple aspects regarding formal proficiency could overwhelm young students. This is possibly emphasised by repetitive faulty use of movement patterns and the development of an unbalanced postural organisation which will become habitual and feel correct after a long time of use. One can observe a structural approach that seems to be affected by a not-so-well “digested" embodiment of the coded material, with patterns of movement that seem to lack a profound and sustainable relation with one’s construction and abilities, acquired at the expenses of “muting” crucial perceptual processes. While choosing to ignore certain sensory processes, and bypass some of the natural reflexes at work when attempting to develop specific motor skills is a fundamental tool employed in dance practices, one needs a better understanding of somatic parameters that could enhance the power to discriminate and control important signals coming from our bodies. As mentioned by Godard, bodies may look apparently well aligned and successful in the acquisition of the movement material, however this is often based on a multitude of coping mechanisms and unjustified muscle tension, which will go unnoticed not only by the teacher, but even by the student/practitioner. In time, these patterns will become strongly embedded in one’s way to approach movement in general, which logically will lead to muted sensorimotor processes, limiting motility, possibly sabotaging later development and often even ending with injuries. Acknowledging the existence and the effects of gravity pull is one way to improve the structural organisation of the body, one that can lead to a better understanding of movement in general and a better navigation of formal kinetic challenges. More than this, having a construction and dynamic model of the human body can greatly improve one’s perspective on functionality and kinetic potential. **Tensegrity** is such a model, with wide-ranging use in physiotherapy, architecture and biology. We will now take a closer look at it.

2.4. Tensegrity model

Around the middle of the 20th century, the structural design based on the concept of tensegrity has started to draw the attention. Kenneth Snelson[28] produced *X-Piece* in 1948, after attending lectures held by Buckminster Fuller[29] at Black Mountain College[30]. It featured two X-shaped wooden struts which didn't touch each other at any point, one of them suspended in the air and held in place by tensed nylon cables (Scarr 2014, p.1)[31].

Kenneth Snelson "X-Piece"[32]

After some years, the architect Buckminster Fuller proposed the term *tensegrity*, combining the words **tensional** and **integrity**, pointing to the basic principle of this model based on *the use of isolated components in compression inside a net of continuous tension, in such a way that the compressed members (usually bars or struts) do not touch each other and the prestressed tensioned members (usually cables or tendons) delineate*

[28] Kenneth Duane Snelson (1927-2016), American sculptor and photographer.

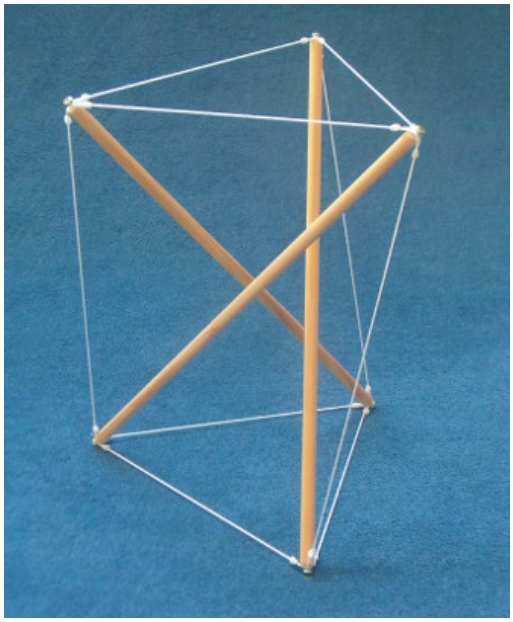
[29] Richard Buckminster Fuller (1895-1983), American architect, theorist and designer.

[30] *X-Piece*, Wikipedia, retrieved 13.03.2019.

[31] *Biotensegrity, The structural basis of life*, Scarr, G., 2016, Handspring, East Lothian.

[32] theartstack.com, retrieved 13.03.2019.

the system spatially (Wikipedia). The term *floating compression* was used by Kenneth Snelson, and the French architect and engineer David Emmerich called it *structures tendues et autotendantes* (Gomez Jauregui 2009, p.1645)[33]. Fuller, Snelson and Emmerich all had patents for what was essentially the same type of tensegrity structure consisting of three struts and nine cables (Scarr 2014, p.4)



Basic tensegrity model[34]

However, the first documented structure resembling that of a tensegrity model was recorded in Moscow, where in 1921 the constructivist artist Karl Ioganson (1890-1929) exhibited a collection of sculptures, which very likely have influenced David Emmerich (Scarr 2014, p.2,3).

Tensegrity structures are stable, not because of the strength of individual members but because of the way the entire structure distributes and balances mechanical stresses (Juan & Tur 2008; Scarr 2014, p.5); a tensegral structure maintains its balanced equilibrium even if it's turned upside down or if its shape changes. Some of the most basic applications of the tensegrity model are seen in the construction of a tent or in that of a bicycle wheel, but are also to be found in large architectural constructions such as bridges, sport venues and art structures. Kenneth Snelson is one of the most prolific artists in the area of tensegrity sculptures (although he preferred to use the term *floating*

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[33] *Controversial Origins of Tensegrity*, Gomez Jauregui, V., 2009, Universidad Politecnica de Valencia.

[34] tensegriteit.nl.

compression) and some of his sculptures are exhibited in open air, as large-scale constructions.

Rainbow Arch-Kenneth Snelson (2001)[35]

B-tree-Kenneth Snelson (1981)[36]

The architect Buckminster Fuller had a strong interest in understanding how the laws of physics are shaping nature and was looking for ways of understanding and applying the *simple patterns and shapes* that come out of this interaction to his work(Fuller 1975; Scarr 2014, p.11). He developed a new approach to geometry which he called *synergetics,* where synergy referred to *the behaviour of a system that is not predicted by the sum of its*

[35] kennethsnelson.net, retrieved 13.03.2019.

[36] kennethsnelson.net, retrieved 13.03.2019.

individual parts but rather by their interactions (p.11). The triangulated sphere is the most essential structure in the synergetic geometry, dismissing the established standards based on the abstract mathematics of a cube, and using the 60° coordinate system as opposed to the 90° cubic system which was centuries old (Fuller 1975; Scarr 2014, p.12). In the summer of 1949 he developed the geodesic dome, a icosahedron-shaped construction based on the principles of *continuous tension-discontinuous compression,* inspired by the initial *X-Piece* of Snelson and based on the tensegrity model. Later on, he constructed more geodesic domes, also sphere-shaped, and his design and construction became very popular in army constructions, civic buildings or exhibition attractions. Probably the most famous is the Montreal Biosphere, designed and built in 1967, the former pavilion of the United States at the 1967 World Fair, and repurposed as environment museum since 1995.[37]

Montreal Biosphere, architect Buckminster Fuller (1967)[38]

Fascia specialist Robert Schleip compiled few characteristics of the tensegrity model in his book *Fascial fitness*[39]:

[37] Montreal Biosphere, canada.ca, retrieved 13.03.2019.

[38] Montreal Biosphere, canada.ca, retrieved 13.03.2019.

[39] *Fascial fitness*, Schleip, R., 2017, Lotus Publishing, Chichester.

-They consist of sturdy and elastic elements.
-The elastic elements are under constant tension.
-The sturdy elements are connected to each other only by the elastic elements.
-The sturdy elements do not transmit compression directly to each other.
-All elastic elements are connected with each other and thus provide a tensional network throughout the whole system (Schleip 2017, p.62).

The field of biotensegrity (which refers to the application of the tensegrity model in biological structures) has offered a new perspective on how the human body functions, and for some it is a more viable alternative to biomechanics, which is based mainly on the lever system, where muscles are using the skeletal base to move and each joint is considered in isolation from the others: *in this scenario, bones compress each other and move around a fixed axis, connective tissues are rarely taken into account and the continuity of force transfer between joints is usually ignored* (Scarr 2014, p.58). Another specialist in biotensegrity, Stephen M. Levin, sees the tensegrity model as an *efficient, low-energy mechanical system* which is able to overcome *many of the inconsistencies that were present in the old view of the biomechanics* (Levin 2014, Scarr 2014, p.57). Biotensegrity specialists have observed the model manifested even at a cellular level, in the way the molecules connect, and how nature is achieving close-packing arrangements and energy-efficient structures. A structural hierarchy is to be found in the human body, where the whole is made out of smaller tensegrity structures able to each support its own particular type of load, so that the *structural and functional interdependency between components* are defining *the essence of bio-tensegrity* (Scarr 2014, p.29). On a bigger scale, when we see the entirety of the human body, we observe how the myofascial chains are actually large functional units which *extend over the length of the body*, providing *both static and dynamic functions* (Myers, Schleip 2017, p.63).

The interest concerning the myofascial tissues and their functions has increased in the last period, leading to important developments. It is now known that fascia contains *an abundance of receptors* which are an active part of the ability of proprioception (the human self-perception of position and movement in space), located in the deep layers of the connection tissues of the skin and joints; these receptors are also present on all fascial tissues, and *they are far more numerous than the nerve fibres that cause muscle movement, namely motor neurones* (Schleip 2017, p.33). In light of this new discoveries, specialists have changed their view on the connective tissue, *specifically, the fascia of the musculoskeletal system is now considered in its own right a sensory organ and body-wide information system* (p.33). We can add to that the function of a flexible yet resilient

construction which forms a *network of continuous tension in which the organs and bones are elastically suspended* (p.62).
Interesting to note that this offers a much more dynamic model of construction and functionality when compared to the regular model of presenting the skeletal system, for example. There, one needs a fixing rod to ensure the vertical position of the skeleton and several wiring-connections to keep each bone connected to the other one, giving the impression of a stacked construction, where bones are layered one on top of the other, the same as bricks are part of a wall. That is actually not the case in reality, since *almost nowhere in the body do bones directly touch each other* (Schleip 2017, p.63).
From this perspective, one has to take into account the dynamic implications of a tensegrity model expressed in the construction and functioning of the human body. If the state of intrinsic tension (pre-stress) is directly responsible for smooth coordinated actions and keeps the body in a state of readiness (as Scarr puts it: *primes the system for action, as well as enabling connective tissues to sense and respond to changes in mechanical stresses from virtually anywhere in the system*), then the muscles are not anymore to be considered the *motors of movement* but *dynamic regulators of connective tissue tension* (Levin 1982, Van Der Wol 2009, Scarr 2014, p.104).

The fascia chains of the body (Schleip 2017, p.64-67)

2.5. A dynamic model for movement

The tensegrity model and its application in biology (bio-tensegrity) offers a dynamic perspective on the human body which helps setting a better starting point for movement systems. For dancers and dance students, a mobile perspective supported by the idea of the physical negotiation of a body which is in a state of intrinsic tension (pre-stress) gives an image closer to the anatomical and physiological reality. Our bodies are always containing certain amount of tension, initially due to its construction but also because of the activation of required kinetic chains needed to counter the effects of gravity. This mind-set opens the door for a justified and productive questioning of the processes that facilitate and fulfil our physical actions. For dance practices, this offers the possibility to address movement research from a more informed point of view, where for instance improvisation tasks are better rooted in anatomical and physiological knowledge, and real information helps build a more layered performance approach. Dancers and dance students often build an image of themselves and their movement choices which stops at a superficial level, based mostly on the information provided by the mirror, limiting crucial proprioceptive processes. In this sense, the identity of most of the physical processes that happen when moving, are going to be shaped mostly by information acquired visually. This not only has the potential to fuel an unwanted *feedback dependency* (Krasnow 2015, p.319), it can also limit technical improvement or creative development. Glenna Batson[40] offers a very interesting account describing her experience when seeing in Paris the building of Centre George Pompidou, which opened in 1977. Its facade open, rendering visible elements which are usually not seen (pipes, heating shafts, air ducts) and *unmasking the internal support system*, led her to draw a parallel with the human design: *the implicit rendered explicit-the inner system of support revealed* (Batson 2014, p.36).

The **textural richness** found when taking a closer, more profound look at the human anatomical construction, can be overwhelming while at the same time it can offer a better understanding and control of how one moves. This is the point where somatic awareness can cooperate with formal training and anatomical information, opening a new potential field of choices in approaching movement qualities, dynamic variations, and a rich, creative, and informed, personal kinetic style.

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[40] *Body and Mind in Motion: dance and neuroscience in conversation*, Batson, G., 2014, Intellect, Bristol.

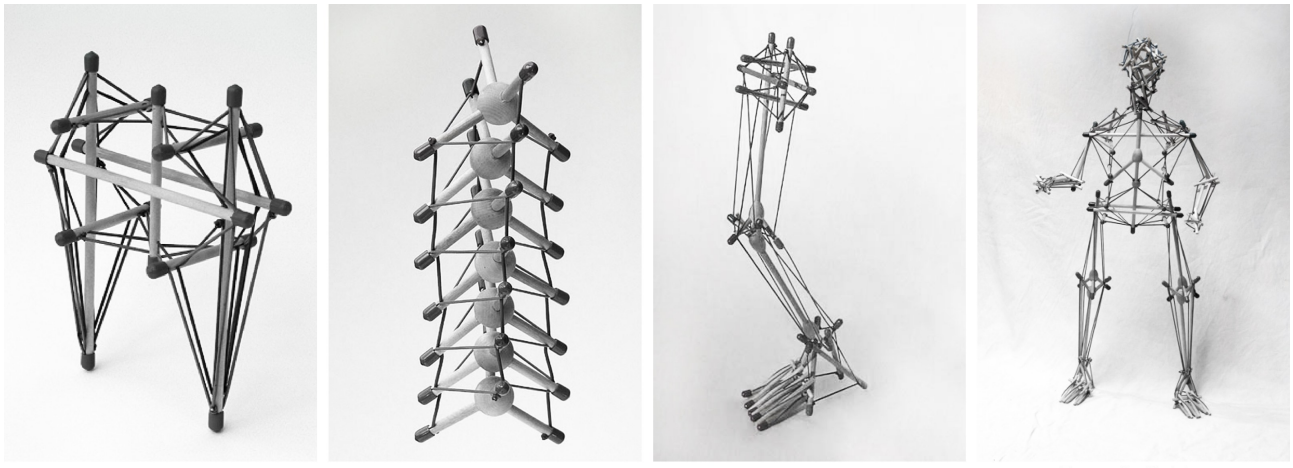
Centre George Pompidou, Paris. Architects Renzo Piano, Richard Rogers, Gianfranco Franchini[41]

Getting in contact with models of constructions and functionality that are comprehensible and accurate, can offer a reliable point of reference in approaching training, dance education and movement research. Developing an informed opinion on what is an economical and efficient way to approach movement, can put dance practitioners in a place of wilful kinetic choices, where health issues are less likely to occur. The understanding for body mechanics, anatomical structures, inner and outer textures, and the logic behind the processes which shape(d) our interactions with our environment, can offer a broader, anthropological view on the human behaviour with direct and immediate application on a personal level. This alternation and interrelation between a general and individual perspective could find its metaphoric (and according to Buckminster Fuller not only metaphoric) reflection in a tensegrity model, which can be found from the cellular to the cosmic level, just as any mini-tensegrity structure contributes at the functioning of the whole human body and its movement choices, and where each part is participating in absorbing and dissipating the incoming stress. The downside of it (and a good reason to be aware of its effects) is that any malfunction will have a negative impact on more than just the spot it originates from: *developmental abnormalities, postural misuse and injury to tissues in one region will also cause changes in the tensional balance of others some distance away, and might jeopardise their functionality as they adjust to a different structural configuration* (Scarr 2014, p.106). All three examples mentioned by Scarr have high chances to relate with dance practices. Developmental abnormalities are not always obvious, sometimes an unbalanced posture can be overlooked in children and become a challenge when facing a more physically demanding type of training such as that required by the professional dance education. Postural misuse is seen both in dancers and non-

[41] Centre Pompidou, web search, retrieved 15.03.2019, photographer unknown.

dancers, due to habitual movement patterns, handling preferences or repetitive actions; these again, are more than likely to occur during dance practices, considering their educational strategies which are mainly based on repetition supporting the acquisition of specific motor skills. Tissue injury is another area which has its share in dance; here, not only young students who are striving to achieve motor skills are prone to injuries, but also experienced performers can become victims to stress, tiredness or faulty repetitions. Another use of the tensegrity model that could offer a methodological support in dance training is assigning a “ground 0” value to it, or a neutral perspective which can take into account anatomical changes and transformations as observable parameters with formative and informative potential. In this sense, one could employ the coupling of somatic awareness with motoric identity observation, in “reading” kinetic choices and “mapping” dynamic transformations that could provide a point of view on movement which bypasses formal allegiances.

Time spent with the “stick and string” models shows how every part of a structure can be integrated into a functioning mechanical unit through reciprocal tension and that their fluid-like dynamics are quite similar to those observed in living tissues, with the particular quality of motion sometimes described as “tensegral” (Scarr 2014, p.108).



Double Tensioned Pelvis | Tetrahedral Vertebral Spine | Tensegrity Leg/Foot | Tensegrity Skeleton

Tensegrity models based on human body parts[42]

[42] interactivearchitecture.org, retrieved 16.03.2019.

From an evolutionary perspective, a body constructed as a tensegrity model seem to be an answer to the effects of gravity pull. However, there is more at work here that led to the construction and functionality of the human body as we see it today. While this is much better covered and accounted for in specific studies to be found in evolutionary biology, I find it interesting to observe a perspective which proposes anthropological, philosophical and physiological parameters while observing the processes which contributed to our evolution. This comes from Thomas Hanna, the person who coined the term “Somatics”, and who’s work offered an unexpected point of view on human bodies, with implications which I find relevant for a better understanding of dance practices, and not only as expected in regards to the somatic practices, but also as a second step and in broader application in observing and understanding the underlying structural and physiological bases of human movement, and the interaction with our environment.

2.6. Thomas Hanna and Somatics

While looking for the origins of the term *somatic* and the context surrounding its emergence, I have became aware of the body of work of Thomas Hanna, the person who advanced an anthropological, philosophical and therapeutical line of thought concerning the evolution of the human body and its functions. In dance world, somatic is mainly related to a specific method supporting an improvisational practice, where the main focus is on information exchange with one's body and the attention *shifts consciousness away from the what of learning (the steps or vocabulary) to the how (bodymind processes)* (Batson 2014, p.6). I would emphasise the origins and thought development of Hanna, who saw *soma* as a process and he proposed an anthropological view on the body which I believe is worth being taken into account by dance practitioners. His take on the evolutionary processes of how the body approached and "handled" the 4 physical dimensions can offer a more profound frame of work for the field of dance pedagogy. In the next chapter, I will attempt to underline some points which I find to be relevant in this sense.

Thomas Hanna was born on November 21, 1928 in Woco, Texas and in 1949 he received a Bachelor degree from Texas Christian University, and later on, a doctorate in Philosophy at the University of Chicago with a dissertation on existential phenomenology[43]. In the 1970's, while he was the Chairman of Philosophy at the University of Florida[44], he was introduced to the body work of Moshe Feldenkrais (1904-1984)[45], who's "Feldenkrais method" had a strong impact on him, and with whom he studied for several years before becoming himself a practitioner. In 1975 he opened the Novato Institute for Somatic Research and Training together with his wife Eleanor Criswell Hanna, and in 1990 he offered his first training program in Hanna Somatic Education. This is a hands-on practice, which is doubled by Hanna's theoretical work as a writer and philosopher. He came up with the term **sensory motor amnesia** (SMA) which referred to faulty, repetitive sensorimotor actions: *the fact is that during the course of our lives, our sensory-motor systems continually respond to daily stresses and traumas with specific muscular reflexes. These reflexes, repeatedly triggered, create habitual muscular contractions, which we cannot-voluntarily-relax. These muscular contractions have become so deeply involuntary*

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[43] somatics.org, retrieved 12.03.2019.

[44] hannasomatics.com, retrieved 12.03.2019.

[45] Moshe Pinchas Feldenkrais (1904-1984), an Ukrainian-Israeli engineer and physicist, also the founder of Feldenkrais Method, a somatic exercise therapy (Wikipedia, retrieved 21.05.2019).

and unconscious that, eventually, we no longer remember how to move about freely (Hanna 1988, p.xiii)[46]. Here, one can find similarities with the theoretical and practical aspects from the work of Moshe Feldenkrais or F. Matthias Alexander (1869-1955)[47]. It was Hanna's strong belief that change and improvement in a person's body actions could only come from within and not from outside, pointing to the difference between working *on someone* and working *with someone* as a therapist in restoring the awareness and voluntary control over the sensorimotor system.

Glenna Batson[48] draws the attention on Hanna's prescience in *regarding first-person experience as the valid source of self-regulation,* which he believed would offer empowerment and freedom, and could help undo *centuries of Cartesian dualism.* In his view, the bodily experience was fully integrated with thought: *Thought is movement, speech is movement, and it is a movement in concert with all other moving patterns of the "body". If we realistically declare what a "body" is, it is the entire unified system of movements that is ourselves in all our conscious and unconscious functions* (Hanna 1990/1991; Batson 2014, p.5)

According to somaticsed.com[49], the website of Novato Institute for Somatic Research and Training, Hanna came up with the term somatics in 1976. In his book *The Body of Life*[50], he points to the Greek word *soma* which evolved to mean *the living body in its wholeness* (Hanna 1993, p.5). In this sense, to define *soma* one has to take into account all processes that have influenced the evolution of a human being together with its responses to the evolutionary challenges coming from the environment that shaped life. *The soma is not an object, it is a process, in the same way life is not a what but a how. To understand the soma and its processes is to understand the how of life* (p.8). In his view, a somatic understanding is looking to take *fuller account of the history of life and its many layers*, mentioning the concept of *life's sedimentations* as used by the philosopher

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[46] *Somatics-Reawakening the mind's control of movement, flexibility and health*, Hanna, T. 1988, Da Capo Press, Cambridge.

[47] Frederick Matthias Alexander (1869-1955), was an Australian actor who developed the "Alexander technique", an educational process aimed at recognising and overcoming habitual limitations in movement and thinking (Wikipedia, retrieved 21.05.2019).

[48] *Body and Mind in Motion: dance and neuroscience in conversation*, Batson, G., Wilson, M., 2014, Intellect Ltd., p. 5.

[49] somaticsed.com, retrieved 12.03.2019

[50] *The Body of Life-Creating new pathways for sensory awareness and fluid movement*, Hanna, T., 1993, Healing Arts Press, Vermont.

Maurice Merleau-Ponty[51], making a parallel to the gradual geological layering-out of the Earth (p.70).

Starting from the observation that living bodies are *self-moving*, in the sense that they are *individual systems of movement* which move in an organised, coordinated and sequential manner, Hanna goes on to acknowledge the influence of the environment on these living bodies which are *expressions of the universe and its physical laws* (p.8). Gravity and thermodynamics laws[52] are the main influences and they *sculpture the soma like invisible hands* (p.8). *A*ccording to Hanna, soma "built" a system that always strives to achieve stability and balance *of a body that was and is four-dimensional; it has* ***height***, ***depth***, ***width*** *and* ***time*** (p.6).

As an evolutionary response to these 4 dimensions, the soma *had to discover, mutation by mutation*, ways of dealing with each type of challenge posed by the physical expression (p.6). The direct response to gravity pull is in the case of human beings obvious in the **vertical, biped position**. Apart of its evolutionary reasons triggered and developed in time, Hanna also sees it as a partner in locomotion and advancement, which is also visible in how the human body (and all animals) have developed a very precise and reliable mechanism which detects when the body is tilted, hinting towards the necessity of awareness of the gravity pull. This is due to the constant motion of the soma, which relays on **loosing and restoring balance**, making such *gravitational programs* a necessity. At this point, Hanna mentions Feldenkrais' term of *potent posture*, which in human beings' vertical position *will display a tonicity of muscles that is equal between extensors and flexors* (p.46). At the same time, he brings to attention two common distortions of the vertical posture, what he calls *somatic retraction* and *somatic collapse*; this describes what happens to the human body when there is too much of a *sustained muscular extension*, a hyperextended lordosis in the first case, or a *loss of energy and muscle tone and a folding forward into a flexed, fetal position* in the second case (p.45). He emphasises the importance of developing a healthy *function of standing upright in balance*, of which any disturbance will have an impact on its ability to acquire *normal*

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[51] Maurice Jean Jacques Merleau-Ponty (1908-1961), French philosopher, most notably known for his view on perception as foundational role in understanding and engaging with the world, the author of *Phenomenology of perception*, 1945, Gallimard, Paris. (Wikipedia, retrieved 21.05.2019).

[52] The second law of thermodynamics states that when energy moves from one form to another (or once the energy has been spent) the state of entropy increases in a closed system (entropy is the measure of randomness, uncertainty but also expresses the loss of a sufficient amount of energy to maintain a system working). In order for the primal cell (Protozoa) to overcome the second law of dynamics, it had to group together with other cells and create a multi-cellular community of a higher order (Metazoa) that was more efficient in the conservation of energy (Hanna 1993, p.14).

human intelligence (p.129). This bears a similarity with the correlation between physical developmental patterns and the acquisition of cognitive and emotional intelligence to be found in Body-Mind Centering (Brook 2011, p.47)[53].

If the vertical position of the human body was soma's response to gravity, then **facing** is its manifestation in the depth dimension. According to Hanna, having a face containing the eyes and the mouth, gives facing and heading the function of platform for expression and fulfilment of one's appetite, facilitating the acquisition of what one needs, for example food. *All living creatures eat their way through the world; their appetite guides their open maws toward the nutritional energy they require* (Hanna 1993, p.69). He goes on to mention Charles Darwin and Konrad Lorenz, who made extensive studies on animals and human species and their typical expressive movements related to their "fight and flight" behaviour, where specific facial actions are related with specific interactions. These observations make Hanna's case in stating that *facing* is our way of approaching the horizontal plane of depth: *we have faces because we are made to move forward. That is not a psychological fact; it is a somatic fact. All animals look at what they want* (p.70). As a follow-up of his concept, he points out that the function of *facing* has evolved in human beings by adding a feature of crucial importance, which is the ability to *focus one's awareness in any direction one wishes* (p.71). This capacity can harness the potential of our sensorimotor system mobilising our *conscious attention,* both for *pointing at something in the external world or, when the occasion invites it, pointing at something within our internal world*, and is a valuable tool in acquiring fine sensorimotor capacities through isolating process awareness and integrating new discoveries *into the general process of our central nervous system, making us more efficient and adaptable* (p.72).

The other horizontal dimension, the width, has found in Hanna's vision its clearest expression in the action of **handling**. To acquire efficiency and complexity, human beings have used *a differentiation of function that automatically creates two discrete functions* (p. 98). The lateralisation is in this case a *specialised lateralisation*, where he observes that most of the human beings are right-handed, or that they specialise at various activities by selecting one side of the body as the main way to handle and perform specific tasks. He goes even further by saying that language is also *a specialised way in which human species handles the world*, mentioning that language operates nearly always through the left hemisphere of the brain and that humans are *the only creatures to have evolved into lateral specialisation* (p.98). Also here one can often come up to instances of *sensory*

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[53] *Exploring Body-Mind Centering*, Brook, A., edited by Miller, G.W., Ethridge, P., Morgan, K.T., 2011, North Atlantic Books, Berkley.

motor amnesia, this time named by Hanna *somatic lateralisation*, which are cases of *neural one-sidedness* leading to faulty body posture and an unbalanced distribution of effort caused by using predominantly one side of the body for a long time (p.77). One-sidedness is a common recurrence in dance practices, where one is habitually better at certain motor skills either organised towards the right or the left side, leading to unbalanced muscular organisations which usually evolve into becoming regular patterns of movement.

Timing is the function of integrating all three spatial dimensions of the body in simultaneous movement (p.106). The 4th dimension, time, is here represented by the function of **timing the three spatial dimensions of the body**, integrating physical expression in within the *6 bodily segments* of the soma: head-tail, face-back, left-right. It does so because it is *the function of the central nervous system that integrates all of our muscular movements and sensory awareness in simultaneous action* guaranteeing *the internal efficiency of the living body* (p.109).

These processes happen mainly at a level bellow our ability of awareness, taking advantage of precise systems and reflexes which ensure their functionality, triggered automatically when we engage ourselves in any kind of physical endeavour, pointing to their autonomous, involuntary and unconscious manner of operating. We observe here (as in the cases of *sensory motor amnesia*) that in spite of a similar physiological schemata common to all healthy human beings, there is an unavoidable personal development at work which will shape the habitual physical and psychological patterns in a different way for each person. A metaphoric perspective on that is found in the work of Bonnie Bainbridge-Cohen (see page 25 of this work), who sees thought patterns as the wind which shapes the sand, in this case the sand being the body; if one wants to see how the wind is blowing, one only needs to watch the shape of the sand[54]. However, in cases of *sensory motor amnesia*, the consciousness can come to help. *The turning of one's attention inward is a powerful agent for change. Focusing one's attention is not simply a psychological act of passive perception; rather, it is a positive, physiological act* (Hanna, 1993, p.74). Hanna uses a very interesting metaphor which underlines the power and usefulness of guided attention toward our own physical choices: *neural spotlight*, where a person can focus its awareness towards the (usually) unaware processes, placing the actions of focused attention in the realm of controlled sensorimotor actions (p.74).

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[54] *Exploring Body-Mind Centering*, Miller, G.W., Ethridge, P., Morgan, K.T., 2011, North Atlantic Books, Berkley, p.3.

Building on these 4 dimensions (standing, facing, handling and timing) soma is manifesting itself as an *expander and grower, who, through the efficiency of its process, has an excess of energy* placing life in the position to overcome both gravity and the second law of thermodynamics, and develops towards *diversification, expansion and growth* (p.128).

A parallel line of thought is that of the **embodied cognition**, developed by Francesco Varela (1946-2001), a Chilean scientist who supported the idea of a more embodied approach to cognition already in the late 1960s and early 1970s. It is interesting to note that Varela was also a Buddhist practitioner and he considered the biological body as the starting point for shaping thought, assigning a central role to *first-person experience for understanding cognition* (Batson 2014, p.77). Together with the Chilean biologist Humberto Maturana (born in 1928), he developed the concept of *autopoiesis*, which placed the living organisms in the position of autonomously *enacting* (bringing forth reality), seen as *embedded in space-time through ongoing cycles of internal regulation and sensory attunement*: *living organisms are self-maintaining, self-regulating, self-producing and self-distinguishing* (p.77). Later on, together with philosopher Evan Thompson and scientist Eleanor Rosch, Varela advanced the point of view that the lived experience is the foundation of consciousness, mind and thought, and bodily experience is not only associated with cognition but its full time partner in co-creating a reality that otherwise would not exist independent from the organism (p.75). Their book *The Embodied Mind*[55] is considered important in the advancement of *a neuro-phenomenological theory of cognition*[56]*.*

It is interesting to note the similarities seen in these ideas with the somatic view of Thomas Hanna, where evolutionary processes rooted in the interaction with the environment have shaped the human body and its functions, or with that of other somatic practitioners and their view on the body-mind coupling and the ability to self-regulate based on aware perception and action. Just as note-worthy is the concept that the *inter-subjective body* becomes an extended entity, with a medial potential which facilitates agency on many levels.

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[55] *The embodied mind: Cognitive Science and Human Brain*, Varela, F.J., Thompson, E.T., Rosch, E., 1991, MIT Press.

[56] "Mind is grounded in the evolution and mutual interaction of the physical body with the environment. Embodiment is grounded in the sense-making physiological body we poses, which also constrains us. Cognition depends upon the actions of a goal-directed, intentional body in the coupling of perception and action. The inter-subjective body is social, extending beyond boundaries of the brain and anatomy." (Varela, Thompson, Rosch 1991; Batson 2014).

Taking an evolutionary line of thought into account could help us asses the processes that have contributed to development and understand how that can be relevant for movement in general, or with particular emphasis on dance-related activities. Meanwhile, it feels as though one can use this perspective as well when taking into account the life span of a dance practitioner. While the 4 dimensions have shaped (from an evolutionary view) our anatomical, functional, physiological and psychological construction, the same 4 dimensions are still at work today, requiring from every human being to employ these features on regular bases, from birth till death.

From a pedagogical perspective, the evolutionary-somatic view of Thomas Hanna and the embodied cognition theory, can better situate the methodological development in dance related contexts. As human beings who are purposefully trained to become *more intentionally embodied*, and acknowledging the agency potential contained in a *goal-directed* body (Batson 2014, p.76), it now becomes clearer that a dancer/performer in the contemporary artistic landscape has the opportunity to become a much more complex, aware and empowered presence. In this case, the body loses the identity of an "instrument", shaped and refined only by endless formal repetitions which will become unconscious physical patterns, locked in the realm of a motor skill; instead, the body gains the opportunity to be acknowledged as a partner in facilitating the (actual) sense-making of one's experiences. This has the potential to give meaning to the act of **making dance**, where a global approach will support an experiential process rooted in one's presence and awareness.

3.1. A fluid perspective on dance training: Overview

What are the most important aspects in dance training, as we see it today? How does one train, or what does one train? How much flexibility can contemporary methodologies of historical dance trainings encompass before major transformations can arise? And probably most important, should these transformations be avoided or facilitated, leaping from the role of mutations to that of tools for reshaping the practice itself?

When speaking of technique, as employed in dance practices, we can connect the perspective of Thomas Hanna who differentiates the *phenomenological first-person (or experiential) viewpoint* which stands *in contrast to a third-person (or more objectified) perspective*, with the point of view of Jaana Parviainen, the Finnish dance scholar who sees dance technique as *the skills and materials that enable dancers to execute the tasks at hand* (Coogan 2016, p.17,18). The notion of what technique could be is broadened by the theorist Ben Spatz, the author of *What a body can do*[57], who describes *technique as both embodied practice and research that structures actions by offering a range of relatively reliable pathways through given situations* (Spatz 2015; Coogan 2016, p.17). In his view, the *embodied practice and research permits individual artistic freedom and empowers the dance artist with the artistry to act with agency, reflection and creativity* (Spatz 2015; Coogan 2016, p.17).
While a clear assessment of its purposes is of crucial importance, broadly speaking, we can see dance training regularly employed in two major contexts: on one side, the technical, formal proficiency of a chosen style (being that in an academic environment, or a dance company, or a place where dance is a free time activity), and on the other side, the training in direct connection with a working process, as a tool for creative development of a performance. Of course, the borders between these two areas are blurred and they are not strictly separated, on the contrary they are overlapping and alternating depending on the set-up of each specific context. This way, we can see how a classical dance training is regularly employed when creating a ballet performance, but also as daily practice in some contemporary dance companies which are trying to offer a unified and universally accessible type of physical preparation for its members. Or, how for instance some choreographers are clearly separating the physical preparation of the performers from the tools used for developing a new choreography, and they do not place

[57] *What a body can do: technique as knowledge, practice as research*, Spatz, B.,2015, New York, Routledge.

much emphasis on the type of training that is chosen, while others are seeing them as two faces of the same coin, informing each other. On the other hand, there is an increasingly higher number of situations where dance is seen as a therapeutic practice, with benefits coming from learning and practicing a number of various styles. One notable example is that of patients with Parkinson's disease, who seem to benefit of improved motor function as a result of dance practice, as revealed by a pilot study[58]. However, in the following I will focus on dance practice as a way of gaining physical proficiency with the purpose to achieve or maintain a professional level.

Especially in an academic environment (but not only), establishing the bases and the identity of the dialogue between the teacher/instructor and students/participants, before and during the conceptual and formal exchange is very important. By dialogue, I mean not only how one communicates with the other, but the type of semantic and methodological grounds which will shape the practice, being that exemplifying, explaining, demonstrating, laying down theoretical aspects, enticing imaginative processes, encouraging associations, or any combination of these elements. The importance of this lays not only in raising the chances of a successful exchange, but also in the inception and development of specific thought patterns, which can have major influences in the assimilation of new material. A major element here includes a clear, yet flexible proposition of how much the student is invited to address her/his own background, as well as her/his thought processes and biographical traits. It is probably a good moment to take into account the considerations on joint-attention, imitation and turn-taking as laid down by Sheets-Johnstone, and how they can be employed, avoided or negotiated, depending on the context. Of course, some formal trainings are more strict in their methodological tools, yet this is exactly why they probably require more attention in facilitating the narrowing of conceptual and formal gaps.

Is a fluid perspective on formal dance trainings possible? What exactly is (or could be) a fluid perspective? Keeping in mind that dance pedagogy is built on exchange, acquisition and transformation, which in turn will make space for associations, discoveries, mutations and the emergence of new methodologies, we should acknowledge that movement (both in its literal sense and as a metaphor for historical development) is at the core of perpetual transformations and achievements in dance. Especially in the post-modern context in which stylistic frames have been often challenged and readdressed, the rise of

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[58] *Dance therapy might help improve function of Parkinson's patients, pilot study reports*, Melao, A., 2018, parkinsonsnewstoday.com, retrieved 26.03.2019.

personal approaches offered a platform for the emergence of new methodological choices. This way, somatic aspects and contemporary dance terminology found their way in a ballet class, while improvisation tools and sport practices found their way in a contemporary dance class. Pre-technical[59] courses (directed at improving sensory-motor processes, or the ability to navigate the environment, or simply improve awareness for spatial parameters) will inform and prepare for both, ballet and contemporary classes. I will attempt to frame some of the formal trainings that are part of my pedagogical choices and offer some alternative perspectives and possible methodological resources that have become tools which I employ frequently in my work.

I should mention that the main perspective of this particular study refers to the acquisition of sensory-motor skills that will have a physiological and anatomically respectful approach towards the human body, with the wish to achieve a point of control which allows the practitioner to observe and choose what types of movement strategies to apply, regardless of the chosen formal frame. Naturally, this will emphasise the process of a corporeal practice directed at self discovery and acquisition of physical control, which can offer the possibility to further develop and experiment in a particular movement research environment of choice, in a healthy manner. This, however, is not to say that dance is a practice that should be taken lightly and any discomfort should be avoided, on the contrary. Formal proficiency requires long periods of sustained effort, carried out during years of practice; yet, that should still aim at developing healthy habits that will ensure a sustainable and durable activity.
I will address classical and contemporary dance trainings from my own methodological perspective, and I will present some of the alternative practices with a hybrid profile, as a general view on the existing techniques and related to my own pedagogical choices.

[59] Historically there have been many ways to name the topic of improving basic human sensory-motor capabilities, sometimes coupled with the wish to build proficiency towards specific formal requirements, as a transition from the personal kinetic realm.

3.2. Methodological considerations in classical dance training

In spite of its huge popularity (or maybe exactly because of it), classical dance training is often misunderstood and subjected to superficial and faulty approaches, in which case a strict and inflexible formal frame is emphasised, often at the expenses of loosing its potential benefits in the areas of motor skills, postural control, or spatial and dynamic awareness. As a methodological improvement, it is important to reiterate the identity of each movement from the classical dance vocabulary. That means, understanding and accentuating the **underlaying basic physical actions at work** when doing any of these movements; for this purpose, understanding the translation from the French terminology can give major hints in regards to the use of imagery, where each movement is coupled with a more or less explicit information contained in its name. Most of the times these are verbs that denote specific dynamic and/or spatial coordinates (for example: *brisé*-broken, breaking; *chaînés*-chained, linked; *glissade derrière*-glide towards the back)[60]. This not only stimulates a more personalised participation in identifying and achieving the movement, but will also allow and invite the use of knowledge transfer, from personal kinetic experiences and from the area of other types of physical practice. Further more, this has the potential to be reinforced by using a language of explanations or associations which is rooted in describing actual physical occurrences, doubled by enabling clear dynamic and spatial propositions. We should note here that it often happens that exactly this **motion-action-verb** coupling seem to be overlooked, many dance students instead striving to achieve "frozen" poses that defy the actual living, kinetic experience of a human body. Moving away from the expected, ideal image of what a ballet movement should look like and getting closer to a more personal kinaesthetic experience, is increasing the chances of recruiting a broader range of tools. This could even lead to the deliberate choice of not using the mirror as a feedback source, or as less as possible, depending on the participants. Julie Brodie seconds Feldenkrais and Fitt[61], observing that: *over-reliance on the mirror may actually interfere with the ability to attend to kinaesthetic cues* (Brodie 2012, p.18). She points out the difference between the exteroceptive system (the senses of seeing, hearing, smelling, tasting and touching) and the proprioceptive system (sensing the position of the body in space based on

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[60] *Technical manual and dictionary of classical ballet*, Grant, G., 1967, Dover, New York.

[61] Sally Fitt, the author of *Dance Kinesiology*, 1996, Schirmer, New York (From *Dance and Somatics: Mind-body principles of teaching and performance*, by Julie A. Brodie and Elin E. Lobel, 2012, McFarland and Company, North Carolina).

information from the receptors in the muscles, joints and skin). Choreographer Yuval Pick makes another important point on the possible negative effects of using the mirror: *If you put yourself in the mirror, it is not only your gaze that can become fixed but also your breath, your sternum, and your spine* (Coogan 2016, p.151).

This leads me to another important methodological choice, namely **not using the ballet barre** (or using it as less as possible). Initially included in classical dance education as a support for building the strength of the standing leg and prepare the body for more complex combinations by making repetitive movements, the ballet barre has since become a major part of building a classical training. It is also employed in character dance training, as well as in some of the modern dance techniques. Although it is very useful in preparing young students and beginners who are still not strong enough to maintain a turn-out stance without support, I suggest that in time it can lead to major drawbacks. It can have a negative impact on the alignment, it creates an unbalanced distribution of forces in the body, and not all the practiced skills can be transferred to the centre work. Donna Krasnow, the author of *Motor learning and control in dance*[62], gives the example of balance exercises, which in her opinion have no real benefits while approached at the barre, since the postural reflexes are not firing when the body has a support, therefore having to be addressed anew in the centre: *the muscles of the standing leg and trunk are not firing at the barre in the same way that they would activate in centre practice* (Krasnow 2015, p.40).

Elements borrowed from modern or contemporary dance techniques are often finding their way in my approach towards classical dance training. Since the common aspect of these trainings is that they are addressed to human bodies, it is easy to realise that many of their specific traits can actually be successfully transferred and applied in other practices than the ones they were originally intended for. One such aspect originates in the Jooss/Leeder[63] technique, which uses the diagonals as spatial references in approaching the degree of turn-out of the legs, initiated in the hip joint. In this case, the legs can be moved on front and back diagonals, as well over-crossing the sagittal line, at an angle of 45 degrees. This way, we can observe an intermediate position of the

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[62] *Motor learning and control in dance: principles and practices for performers and teachers*, Krasnow, D.H., Wilmerding, M.V., 2015, Human Kinetics, Illinois.

[63] Kurt Jooss (1901-1979) and Sigurd Leeder (1902-1981) founded together Neue Tanzbühne at the Münster Theater in 1927, and later on moved to Essen, Folkwang Schule. In 1934 Jooss and Leeder opened the School of Dance at Dartington Hall in Devon, continuing the development of their method based on the study of *eukinetics* and *choreutics,* and later moved to Cambridge in 1940. (Wikipedia, retrieved 21.05.2019).

feet ,which when used in ballet training, can help build strength and control before fully addressing the difficult realm of 180 degrees *en-dehors* (turn-out) movements, facilitated by recruiting intermediary kinetic synergies benefiting the iliopsoas and core muscles organisation. At the same time, this adds an extra spatial reference for the body, coupled with the aware identification of core-distal movement patterns. Other elements borrowed from modern and contemporary dance practices include high and low curves, successive spine rolls (alternating with the habitual trunk movements to be found in ballet training which do not include rolls), or bounces; all this is supported by a language which facilitates a clearer understanding for the underlying concept contained in the chosen movement combination. More so, somatic principles as breath, control of initiation and imagery are effortlessly joining and facilitating the practice of a coded, formal training which gives more possibilities of achievement and discovery in the areas of motor skills, sensory awareness, movement analysis and dynamics.

Placing the students in a position of control and clarity, and giving them the possibility to purposefully engage in self-regulating processes can broaden the potentiality for transfer of knowledge.

3.3. Methodological considerations in contemporary dance training

There are several points that shaped and influenced my contemporary dance training methodology. Initially educated as a ballet dancer in Vaganova[64] method, I have pursued my wish to enlarge my range of physical and artistic expression and have been involved in a multitude of projects, workshops and studies as dancer, performer or choreography assistant. This way, I have been exposed to various choreographic signatures, types of training and methodologies such as: release technique, contact improvisation, floor technique, Body-Mind Centering and others. This mixture has left imprints in my artistic and pedagogical identity in various degrees, and is probably the reason why I am very open to a conceptually fluid construction of my training and the wish to maintain a good level of awareness in regards to the best way to provide a useful experience for my students, according to their needs, level and context.

The main foci of my contemporary dance training are:

- awareness for the gravitational pull and the controlled engagement with it;
- clarity in recruiting sustainable body patterns;
- confidence in employing personal choices;
- awareness for the “identity” of the proposed movements, in terms of initiation, dynamics and spatial development.

It often contains improvisation segments which are exploring somatic, kinaesthetic, spatial or anatomical parameters, and places emphasis on the awareness for the personal space (kinesphere), as well as for the negotiation of the shared space with other participants. Following improvised explorations directed at acknowledging personal kinetic choices, new movement patterns are discovered and practiced, attempting to build the habit of employing the biographical repertory in solving formal challenges.

The alternation of experiential explorations with set movement patterns which are placing accent on the intentional use of personal findings, is used as a tool of organising dynamic and temporal choices according to various tasks. At the same time, the clear assessment of the targeted group of participants and the context in which the training takes place, being that an academic or professional environment, is fundamental, and the perceived level will inform and influence the tools and methods employed.

I will elaborate on some of the elements I have listed earlier and give some specific examples.

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[64] Agrippina Yakovlevna Vaganova (1879-1951) was a Russian ballet teacher who developed the Vaganova method of teaching classical dance. (Wikipedia, retrieved 21.05.2019).

A reiteration that is mentioned during the classes and which significantly influences and filters the chosen material , is the unavoidable presence of the gravitational pull. This way, it is often the case that the training will contain improvisational explorations laying on the floor, followed by set movement sequences which maintain the relationship with the horizontal approach, where core-distal patterns are being brought to attention and put into use. The ongoing cooperation with gravity is helping the students build awareness for the adjustments of the graviceptors (the receptors in charge with sensing and sending to the central nervous system the information regarding the gravity pull) which will help activate postural control with economical physical actions.

This is often achieved by using what I call micro-systems, consisting of focal pairing of body parts with the purpose of aware motor choices and the development of reliable movement patterns. These micro-systems are pairing sensorimotor-relevant body parts, used both for improvised explorations and also as guiding lines of actions through the body during set movement sequences, which later on will be merged with previously explored material, leading to a global body-approach, where personal choices are facilitated by clear spatial and dynamic embodiment. Few examples of micro-systems are: head-sit bones, pelvis-feet, head-hands, shoulders-hips, and others. This methodological choice is in direct connection with the tensegrity model, which observes *structural and functional interdependency between components* (Scarr 2016, p.29)*,* and facilitates the inclusion of the floor as an integrated element in training (and dance in general), providing a reliable support while engaging specific body patterns and moving. In this case, major motor coordinations are broken down to smaller segments, allowing the acquisition of motor skills based on personalised explored coordinations, a tool which we also meet in some somatic practices, for example Body-Mind Centering. We can observe a close relation between the concepts of **clarity in recruiting body patterns** and **confidence in employing personal choices**, which could reflect in two areas of expression.

First, the use of task-based improvisation explorations used during the training will facilitate the identification and recruitment of functional patterns which will provide the dancer with a reliable, anatomically-based and motor-friendly type of physical behaviour. This in turn, will stimulate a personal process of discovery and employment of physical choices which has the potential to lead to the development of a recognisable, distinct personality as a performer.

Second, the fact of being invited and supported in personal discovery, especially in the context of a formal dance class, gives the student the chance to develop the habit of

getting her/himself involved as a participant and co-creator, and not only as a receiver. Not only is this a way of encouraging self-regulation, this can also transfer in contexts outside a dance studio, where the student will get used to reflect, research and apply personal processes and perspectives.

The awareness for the **identity of physical actions** refers to the ability to identify, analyse and choose what a movement should feel and look like, as well as being able to reproduce it when needed, but also to differentiate it from another movement. That implies the knowledge of where the body is in space, what body part is initiating the movement, where each body part is in relation to the others, what type of speed and dynamic are needed to fulfil the movement, and the ability to link it with the movements before and after it. This is the moment when proprioception, as well as exteroception are going to be fully involved, placing the dancer in an enhanced state of physical control, leading to a clearly identifiable spatial and dynamic presence. As a possible development, the ability to change the appearance of a movement by affecting its parameters or re-contextualising it, is seen as a task which allows an even greater amount of control, providing the dancer with the chance to not get stuck in a one-dimensional aspect of a movement. This will challenge the ability to maintain a flexible and adaptable profile, a feature that is much needed as a professional dancer. The clear and purposeful use of dynamics is to be acquired and practiced during the training. Expanding the range of velocity, in conjunction with differentiating between habitual body choices and practiced, acquired skills, will offer the tools for thorough fine-tuning, supporting a broad range of dynamic outcomes where the movements are processed, matured and expressive. Meanwhile, time as an immediate and unavoidable presence, will be approached as a liminal, explorable parameter which enhances the dynamic choices offering a valuable performative tool.

Julie Brodie names breath, sensing, connectivity and initiation as the somatic principles which can assist dance practitioners in *fulfilling their movement potential* (Brodie 2012, p. 2). She bases her statement in the concept of *body/mind wisdom* which she sees as *fundamental to life itself*, therefore these principles are included in all *movement and movement re-education systems* (p.6). In her words: *there is no copyright on concepts like breath, connectivity, sensing self and the environment, and initiation-they are innate components of the living organism* (p.6). She sees awareness as *the first step toward change* and emphasises the importance of having the chance to experience new options, which in turn can lead to *lasting change* (p.6).

Writing about somatic principles that can inform contemporary dance classes, Jenny Coogan names some *commonalities of somatic practices*:

-Slowing down to feel and pay attention to bodily cues

-Releasing the body into gravity with breath support

-Reducing tension and discovering new patterns of coordination

-Becoming more aware of how to live and move in a three-dimensional space (Eddy, Williamson, Weber 2014; Coogan 2016, p.21). She mentions sensation, perception, kinaesthesia and proprioception as responsible for perceptual motor processes which in turn are supporting *the acquisition and assimilation of human movement* (Coogan 2016, p19,20)). The aforementioned somatic principles and their direct connection with basic first-person, experiential coordinates, are inviting the use of improvisation as a tool of sensory-motor skills acquisition, often employed in my own pedagogical practice. The integration of guided improvisation sessions in the beginning of a technical class offers the participants a chance to observe, analyse and (re)connect with their own approaches towards sensory-motor processes. Simple and easy to follow tasks, in conjunction with real-time verbal guidance which uses a permissive and empowering language, offers the students a platform where they can experiment and discover, free from the pressure of having to fulfil formal, aesthetic expectations. In general, the explored tasks are directly related to the following segments of the class where set, choreographed material is being taught with the purpose of integrating the previous, experiential session. However, a more profound layer of awareness and development is being sought here, involving a work of personal discovery, in which case each of the participants will draw knowledge from their own personal exploration and will aim to integrate it in the subsequent dance practices, regardless of their formal requirements.

The connection between the linguistic realm and that of kinetic processes is generally open to negotiation, confusion and cooperation, and that makes it an invaluable (as well unavoidable) pedagogical tool for dance practices. It should be noted that each dance practice generates and develops a specific type of language, using specific terms that encompass or describe physical actions, movement sequences or movement transitions. This usually leads to a distinct terminology which contains not only specific terms but also words that describe more general processes derived from anatomical knowledge, metaphorical translation or based on imagery techniques. This hints to the importance of employing a model in dance pedagogy, such as that of the tensegrity-model, as it is the case of my proposition. The idea of having a model which sees the body dynamically built, based on interrelating segments under different degrees of tension, opens the

possibility to develop a language which will trigger and support a wide range of physical actions. This can help integrate and better relate with terms which are regularly used in dance terminologies but often have no point of reference, especially for younger dancers; some examples include *opposition, resistance, extension,* or *bounce,* terms which are mainly attached to a specific formal realm. Taking into account the hierarchical build of the tensegrity model where smaller tensegrity connections are helping isolate some body segments while at the same time still being well integrated in the general structure (Scarr 2014, p.30), a dancer will possibly have a different perspective on terms such as *compensate* or *adjust*, as well as *opposition, resistance, extension,* or *bounce,* being that when dancing alone or with a partner. We observe here one more chance to transfer and apply knowledge, especially since the terminology viewed through the perspective of the tensegrity-model has a textural, dynamic, mechanical and architectural base, related to the anatomical structure of the human body, thus facilitating the use of its specific language and imagery in other formal contexts. At the same time, having a more complex perspective on how terminology is generated, dance students have the chance to research and develop their own logic and principles for creating personal practices, using their own vocabulary and thought processes.

3.4. Hybrids, alternatives, preparations

Recent scientific developments based on centuries of methodological expertise, have led to major improvements in sports, which have spread to the realm of fitness and other physical activities. In turn, this provided dance community with more tools for practice development and cross training, which often went hand-in-hand with more thorough research done by experts in the field of dance science. Apart of the practice of, for example Pilates, Gyrotonic, Gyrokinesis or Yoga, which often find their way as a habitual parallel practice for dancers, also running, swimming or isometric exercises are now used to enhance physical shape, endurance and posture control. In some cases, preparatory methods which are directly targeting specific formal requirements connected with particular dance techniques, have been developed, such as *floor barre*, which contains preparatory exercises aimed at improving classical dance. Developed by Boris Knyazev[65], it contains some movements of the ballet barre done while laying or sitting on the floor, this way reducing the effects of gravity, increasing the awareness and use of the core muscles, and achieving the specific turn-out position of the legs easier.

Floor barre[66]

[65] Boris Knyazev, en.wikipedia.org, retrieved 05.04.2019.

[66] yumiko.com, balletsummerestonia.com, retrieved 05.04.2019.

A more recent addition as a preparatory technique for classical dance is the *Progressive Ballet Technique*, developed by Marie Walton-Mahon[67], which uses stability balls and elastic bands to prepare the body and improve alignment and stability.

Progressive Ballet Technique[68]

Another interesting case of preparatory method addressed both to classical and modern dance, is that of *Les Barres Flexibles*, developed by Wilfride Piollet (1943-2015), a French dancer and choreographer who was a *danseuse-étoile* at the Paris Opera Ballet[69]. She developed *Les Barres Flexibles* from a desire of independence from the actual ballet barre, and was particularly influenced by her knowledge of *Analyse Fonctionnelle du Corp dans le Mouvement Dansé,* AFCMD, (Functional Analysis of the Dancing Body) developed by Hubert Godard and Odile Rouquet[70]. One of the features included in some of the exercises of *Les Barres Flexibles* is the use of a small ball, approximately the size of a tennis ball, its purpose being to bring awareness in the hands and arms, while at the same time challenging the reflexes by adding an extra element of coordination, transferring it from one hand to the other or dropping-and-catching it during the execution of the exercises.

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[67] www.pbt.dance retrieved 05.04.2019.

[68] www.pbt.dance, youtube.com, retrieved 05.04.2019.

[69] Wilfride Piollet, en.wikipedia.org, retrieved 05.04.2019.

[70] *Elaborée dans un objectif préventif, éducatif et artistique, l'Analyse Fonctionnelle du Corps dans le Mouvement Dansé (AFCMD), interroge l'intention du geste et l'organisation posturale de la personne, dans un contexte d'action défini, en instaurant un dialogue ouvert avec l'imaginaire du mouvement*. (Elaborated for prevention, education and artistic purposes, AFCMD is questioning the intention behind a gesture and the postural organisation of a person, in the context of defined actions, establishing an open dialogue with movement imagery (tr. Georgescu). afcmd.com, retrieved 05.04.2019.

Les Barres Flexibles: *Frappé*, in parallel and in turn-out position, with ball[71]

A more alternative training aimed at enhancing contemporary dance practice, but which often attracts athletes and martial arts fighters, is *Fighting Monkey, d*eveloped by Linda Kapetanea and Jozef Frucek, two contemporary dancers and choreographers. According to their website, their interest in understanding *the principles of the human movement, communication and the ageing process*[72]*,* is at the core of their conceptual quest. Apart from exploring movement material which identifies it primarily as a contemporary dance/ physical practice, *Fighting Monkey* contains other aspects placing emphasis on playful actions and interactions, often using martial arts elements or focused anatomical explorations, as well as exercises which are making use of objects, such as wooden balls, strings, or handles, challenging the coordination and reflexes.

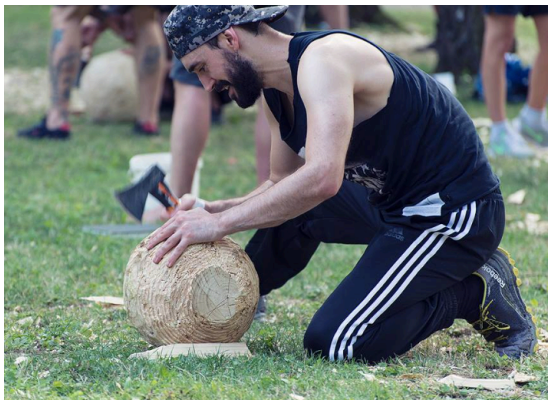
Fighting Monkey, workshops[73]

[71] *Les Barres Flexibles*, facebook.com, retrieved 05.04.2019.

[72] fightingmonkey.net, retrieved 05.04.2019.

[73] *Fighting Monkey*, facebook.com, retrieved 06.04.2019.

Interesting to note that their workshops are often requiring the participants to craft the tools that are going to be used, for instance carving wooden balls. In this case, the structure, consistency and texture of the raw material is offering the chance for a transformative process, where crafting an object opens new perspectives on sensory-motor skills while at the same time helping build a bonding relationship with the object which will accompany the physical practice, leading to a more profound and complex process. Using an inanimate object during practice opens a new layer of awareness for the gravitational pull, enticing observation and research in regards to what type of actions or kinetic synergies one needs to use in order to counter it.



Fighting Monkey workshop; carving a ball out of wood, and wooden-ball practice[74]

[74] *Fighting Monkey*, facebook.com, retrieved 06.04.2019.

3.5. Own methodological considerations

As we can see, the use of tools designated to enhance awareness and develop motor skills is often a complementary methodological choice. Our movement patterns are generally not in the foreground of our attention, and that is for a good reason; the complexity of our sensory-motor system would suffer if we were to be permanently aware of all of its processes, therefore some of our habitual actions are happening in the background of our minds. It is here where handling objects could bring to our attention some of the actions we need to make (and most probably improve) in order to "negotiate" coordination and motor skills. The use of an inanimate object (such as a ball, a handle or an elastic band), which will not cooperate with its handler in navigating gravity, will challenge the awareness, pointing to the limits of our proprioception and the required movement patterns facilitating the fulfilment of the task at hand. We can see how controlling the turn-out of the legs and establishing the core-distal patterns are facilitated by the use of a stability ball in *Progressive Ballet Technique*, or how the use of a tennis ball can enhance awareness of the arms placement as well as challenge the reflexes and the posture-control in *Les Barres Flexibles.* Meanwhile we can see how carving a wooden ball can enhance alternative sensory-motor skills which will help develop a broader awareness for textures and transformative processes. It was revealing to watch a video of Bonnie Bainbridge-Cohen during one of her Body-Mind Centering workshops, where she used an elastic band, held in tension between her hands, while moving with he task of imagining the elastic band as a continuation of her fascia system. The texture and consistency of the elastic band offered the chance to actively realise some of the forces and movement patterns at work in the body, pointing towards the postural and dynamic adjustments and reminding starkly of the tensegrity model and its structure.
The wish to integrate alternative physical practices in my contemporary dance training has grown out of the frustration caused by the lack of enough cross-training as a complement to formal preparation, but also from the wish to enhance and challenge the range of bodily repertory and sensory-motor abilities, much needed as a performer in today's professional dance environment. This way, for example the use of simple, repetitive, basic physical actions, will help focus one's attention on the coordination, and reveal the employed kinetic patterns. In other cases, the uncontrollable outcome of some improvisations tasks will elicit adaptive solutions, which will challenge familiar territories and will generate personalised responses. At the same time, I am looking for ways to facilitate the flow of personalised kinetic choices towards the formal expression,

smoothening a transition between two realms that are often perceived as separated and incompatible. Therefore, these practices have no formal or stylistic ambitions, on the contrary, they are aimed at building clarity in discriminating personal, neutral stances from formal, coded movements, while offering the chance to chose from a broader repertory of bodily affordances. I would situate them at a *pre-technical* level, in this case technique being considered the formal training usually taught as a model towards which one needs to "gravitate" and strive to achieve.

Bonnie Bainbridge-Cohen, workshop[75]

[75] *Exploring fascia through the fluids and bands with Bonnie-Bainbridge Cohen*, https://www.youtube.com/watch?v=jrPZ7t-N7-M&t=210s, retrieved 06.04.2019.

3.6. Pedagogical Project with BA students

As part of my movement research interest in the areas of pre-technical movement, knowledge transfer and fluid dance training, I have proposed the leading team at IDA[76] to teach some classes for the bachelor students. My intention was to raise awareness of how basic human patterns manifest already before approaching formal technical training and how, when employed with purpose and clarity, they could improve any kind of movement vocabulary, including contemporary or classical dance. My interest in exploring the tensegrity model as a physical-dynamic movement model, found its way in my propositions together with my own research in the domain of actualised historical methodologies for dance pedagogy. This materialised in 3 series of 3 meetings and later on, in the following semester, I had the chance to teach the same students 5 consecutive days of contemporary dance classes. This time, I took into account the previous three experiences we had shared and I brought in my interest in somatic approaches applied to formal techniques. I based my class on personal knowledge and on newly acquired information coming from specialised literature and research. The areas of pre-technical movement and knowledge transfer were present in my propositions, while a variety of tools were directed towards “negotiating gravity”.
The 5th and last meeting, which contained 4 consecutive classes, gave me the chance to approach the contemporary dance training from a different perspective, with the use of a square-shaped frame, taped on the ground. This offered a spatial and conceptual frame for developing and performing the exercises, in a mix of floor-technique, cross-training and dynamic explorations, based on clear spatial coordinates.
I will describe each meeting in more details.

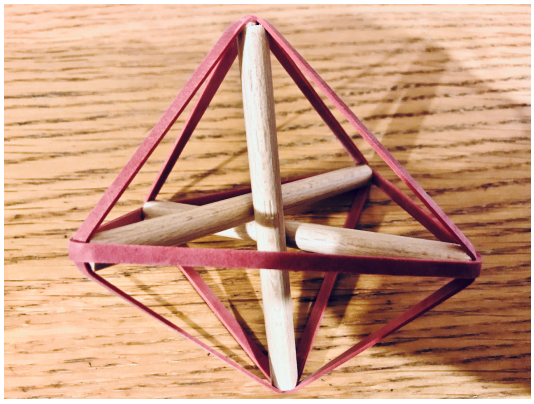
I.

For the first meeting, during 3 consecutive days, I decided to explore what I call “pre-technical” practice. This comprised of **somatic-inspired movement improvisation** sessions, which invited the participants to find their way in establishing sensorimotor patterns. The class developed according to anatomically informed tasks and used as a physical-architectural perspective the **tensegrity model**. I started by explaining briefly the origins and background of the tensegrity model and how I envisioned it offering a rich

[76] Institute of Dance Arts, Anton Bruckner University, Linz

source of inspiration in regards to body organisation and dynamic choices. I pointed out the similarities between this model and how the human body functions, mentioning the connective tissues and fascia as a flexible and resilient connection which forms a *network of continuous tension in which the organs and the bones are elastically suspended* (Schleip 2017, p.62). With given material, each student assembled by themselves a small, basic model of tensegrity made out of three wooden sticks and three closed-loop rubber band. The class continued with an individual, introspective “body-scanning”, guided by my indications and following a progressive, anatomical path combined with imagery suggestions regarding the textural construction of the interior of the body. Later on, I suggested pairings of body parts into what I call “mycro-systems”, which were used as anatomical points of initiation of personal movement improvisations, such as hips-shoulders, elbows-knees, hands-feet etc. The purpose of these improvisation sessions was to create a setup where the students would observe, analyse and make informed and wilful movement choices, which were reflecting a personal approach leading to an increased level of control. This developed in the alternative use of levels, space, dynamics and speed variations.

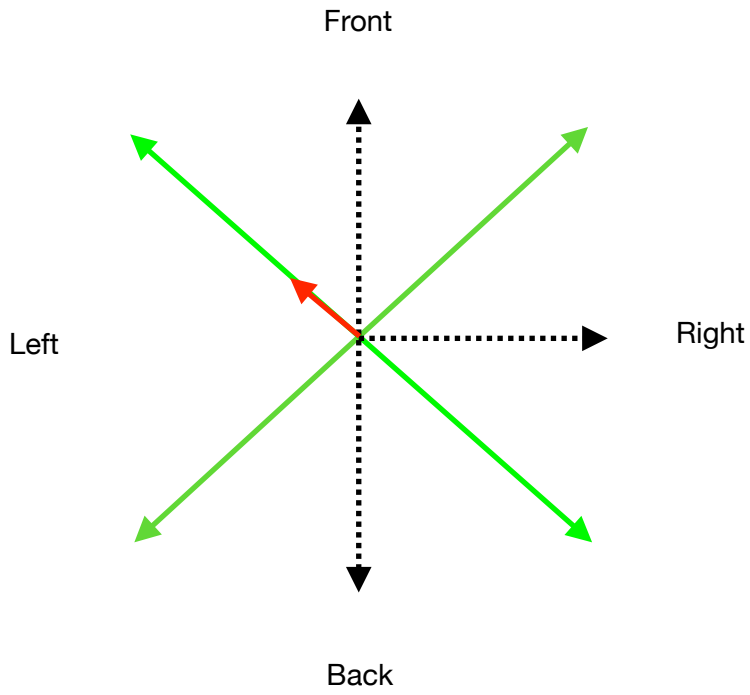
The second and third day, more improvisation tasks were added during the classes, leading to a heightened level of physicality based on personal choices. I should mention that these classes were scheduled (in collaboration with the coordinating professor) at the beginning of the day, with the purpose (and hope) that the processes discovered and practiced during my training would be transferred into the following classical dance training, taught by another teacher. In the feedback session at the end of these three days, the general consensus amongst the students was that preparing the body in a free, improvisational mode gave them more time to discover their own physicality, helping them to make more personally-informed choices in other contexts as well.



II.

After approximately two weeks, I taught the same group of students for three consecutive days, this time classical dance training. Two points of references were present in my propositions. The first one referred to our previous set-up, which brought once again to their attention the tensegrity model and the use of personalised movement patterns. The second point of reference was new for the students, and was connected with my interest in the pedagogical method developed by Jean Cébron at the Folkwang University in Essen, Germany. This led me to a visit there, where I had the chance to watch three days of training given by Stephan Brinkmann, a contemporary dance teacher who is using a personalised version of Jean Cébron's method. The origins of this method can be traced back to Kurt Jooss and Sigurd Leeder and it is based on many of the principles and tools of analysis developed by Rudolf von Laban. The classes consist of floor, barre and centre exercises with enhanced awareness for anatomical, spatial and dynamic parameters, and emphasises clarity in regards to movement initiation. Although this is a modern dance method, I integrated in my classical training some of the principles encountered while watching the video archives with Jean Cébron teaching, and also from the training of Stephan Brinkmann seen during my visit in Essen. These principles were mainly addressing spatial and dynamic parameters, but also some formal aspects: **trunk curves** (high and low), extensive **use of diagonals** in organising movement patterns, **isolating anatomical connections**, or repeating the same movement with variations of speed, dynamic or timing emphasis, all the while trying to stay as much as possible in the realm of classical dance technique. Special attention was given to the use of diagonals as a recurrent element, at different moments and for various reasons. They were used in many exercises and as an in-between position of the feet on the ground, an intermediate stance between parallel and 180° turn-out feet where each foot is placed on the floor at 45° angle from the front line. As versions, the directions of battement-tendu were not done only towards front, side and back, but towards the four diagonals as well (see next page), with the feet placed in the intermediate position when starting the movement. *Battement tendu* was also done with the body tilting in the opposite direction as the foot, creating a long, diagonal line in the body. Considering the body configuration while doing these exercises, there were more chances to build a controlled intermediate turn-out position before attempting a maximum hip rotation, and at the same time there was more information that could help identify and control the space. The use of diagonals (both, in body configurations and as spatial parameter) in devising the exercises during this three

days session was one of the main concerns for me. The core-distal connection received particular attention in an attempt to enhance the global approach of the movement and increase the level of technical control. The intermediate diagonal positions of the legs (between parallel and turn-out, front and back) were used both, in the exercises at the barre and centre, and as well as variations for the arms and trunk positions.
These alternative choices were not meant to challenge the formal integrity of classical dance vocabulary, they were mainly meant to prepare and support the difficult corporeal organisation required by the turn-out position, which offered the chance to develop reliable structural propositions that could have been employed in other contexts as well.



Lines of action (view from above, standing position)
In this case, the left leg is the standing-leg, while the right is the working-leg.
The black doted arrows indicate the usual directions a *battement tendu* movement is executed with the right leg.
The green arrows indicate my additions as directions and lines of actions, when executing *battement tendu* with the right leg, and also for arm or trunk movements.
The red arrow indicates the position of the foot of the left standing-leg, which in this case is not moving.
These lines of action refer to the rotation of the leg initiated in the hip joint, with the knee and foot aligned at the same angle of rotation.

III.

Three weeks later, the meeting with the same students took place, this time during two consecutive days, each comprising of one and a half hour of classical dance training. Again, the tensegrity model was briefly reminded and brought to attention as a physical/ dynamic perspective of the body. The core-distal body patterns expressed in diagonals, the use of trunk curves, awareness for movement initiation, as well as clarity in regards to dynamic choices, were reiterated throughout the classes. A new element was introduced (or rather extracted) and that was the choice of **not using the ballet barre**. There are several reasons behind this choice but right now I will mention only two, which I think are the most important.

Already in the beginning of the development of my strategy for planning the work with the students (for this particular group), I had a thorough investigative period where important aspects were assessed. The specificity of the environment (in this case academic), that of the group itself, of each student in particular, and their daily schedule at the moment of my classes, were taken into account and had an impact on the chosen method for my pedagogical propositions.

From my observations, at IDA, the use of ballet classes (although part of a daily curriculum) seems to aim at offering the students a broader view on approaching various movement styles and techniques, and it is more guided towards building-up versatile performers rather than specialised, ballet-oriented dancers. Therefore, I found it important to place the students in a situation where they could focus on a more global strategy of development, and where they felt invited to participate and transfer the acquired knowledge (from and into) any other classes. For that purpose, the use of ballet barre would have maintained an unneeded sense of formal specificity which possibly isolated and limited corporeal affordances.

The second reason I decided to not use the barre, was concerning the alignment. Initially, the purpose of the barre was to help dancers prepare more difficult movements before executing them in the centre. Repetitions were (and are) used to strengthen the standing leg and achieve stability and posture control until the coordination was successful. However, a major draw back occurs (in a small or higher degree) triggered by the position (faulty or correct) of the hand holding the barre. Most of the times, this adds an increased level of tension around the shoulder area, leading to an unbalanced posture and distribution of forces in the body. The wish to facilitate the achievement of complex leg gestures is shadowed by the overall negative impact of the postural distortion induced by the use of the barre. It is safe to say that when attempting the same exercises in the

centre, after the barre, one has to undergo a new period of reassessment and adaptation in order to achieve a stable, controlled and productive body alignment, therefore rendering the results of the exercises at the barre as less useful.
The last part of the class consisted of a **movement phrase using classical dance vocabulary**, which resembled in its construction a movement phrase coming from a contemporary dance training, with the purpose of observing the possibility to practice a custom-created choreographic sequence which moved away from the habitual formal training development.

IV.

The next meeting with the same group of students took place four months later and it consisted of five consecutive days of one and a half hour contemporary training. For this occasion, four distinct frames were employed, inviting the students to discover, analyse, practice and employ the elements they thought would allow a transfer of applicable aspects.
The first frame consisted of a half an hour long **guided improvisation** using principles frequently used in Body-Mind Centering. The first of these principles was based on 5 actions which are part of the *developmental action sequence* (Brook 2011, p.47), as established by Bonnie-Bainbridge Cohen. These are **yield**, **push**, **reach**, **take hold** and **pull**, and are done in strong connection with the floor (and gravity). This actions-sequence reflects observations made on children, and *is repeated over and over as a young one explores her environment* (p.48). To make it clearer, I will quote Annie Brook: *Take a small toy and play with a baby. As the baby becomes aware of the toy through stimulation of the senses, she yields and takes in the new information. As this information comes in, she will gather energy and push down into the support of the earth. A counter-push moves back up and through the body, sequencing out her head and tail and giving her the support to look with awareness at you and the toy. Watch as she reaches out and takes hold of the toy. Feel the strength of her grip and the pulling force as she pulls this toy toward herself. Notice how she yields again as she explores the toy and then decides whether she likes it or not* (p.48). According to Brook, and reiterated in Body-Mind Centering, this sequence of actions is part of the development of every human being and has implications in physical, emotional and psychological areas. This is not only relevant in movement sequencing and re-patterning, it also supports *the human nature of desire and needs fulfilment, or attainment of pleasure* (p.47).

Other principles borrowed from Body-Mind Centering and used in these sessions of contemporary training, were specific anatomical parts association, serving as **aware and isolated initiators of the movement** while the rest of the body served as facilitator during explorations: head-tail bone, head-hands, tail bone-feet, and others. In this case, the purpose for this "body segmentation" was to identify important lines of action in the body, based on the specific and differentiated use of movement patterns. Awareness for breath received a particular attention, mainly in observing how dynamic changes will affect its rhythm and intensity.

The second part of the class consisted of **a series of set exercises**, containing elements of floor technique as well as dynamic center combinations of small jumps, leg kicks and other ballistic actions. These exercises were done in the second, fourth and fifth days during that week, following the Body-Mind Centering-inspired improvisation session.

The alternative for this second part was proposed in the first and third days of the week and consisted of **a series of sport inspired exercises** using a small elastic rubber band (approximately 25 centimetres long, closed-loop). Each participant received one elastic band and after a brief exploration where its texture, elasticity and resistance were assessed and tested, exercises were proposed and executed . The underlying actions of these exercises were walks in two legs (towards front, side or backwards), or walks in four limbs (towards front, side or back), done with the elastic band connecting both ankles, or both wrists, or one elbow and the opposite knee; this way bringing to awareness the extra effort required to employ a core-distal connection or oppositional kinetic synergies. After a while, these explorations were done in pairs, where the elastic band was shared, connecting two people.

The last part of the training consisted in gradually **learning and practicing a set movement phrase**, which by the end of the week had a 3 minutes long duration. The movements of this phrase were inspired and guided by the five actions contained in the Body-Mind Centering's *developmental action sequence*, this time in different sizes, dynamic expressions, and spatial reference. Fluid and controlled transitions from and towards the floor were emphasised, at the same time with a wide dynamic range of physical choices.

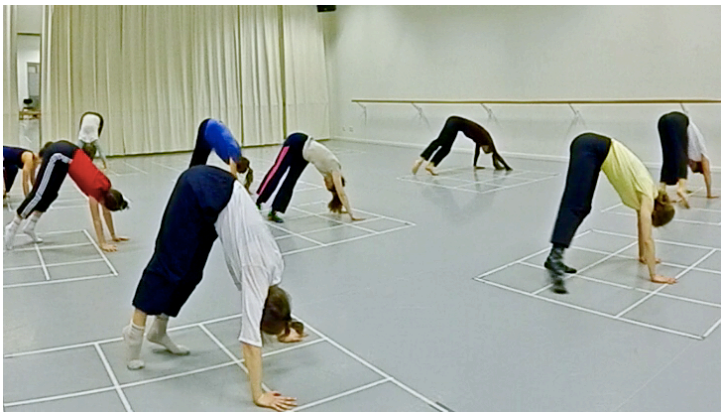
Elastic band training (in photo Maja Mirek, Seraphim Schuchter)

V.

The last meeting, consisting of 4 consecutive contemporary dance classes, saw the use of a **square-shaped area**, divided in 9 smaller squares, which was taped on the floor. The same type of floor-print is often employed in exercises of fitness or physical preparation for sports, used as spatial reference for foot-work, speed and accuracy practice.
Each student used their body size and proportions in establishing the size of the square, much like a version of the proportions advanced by Leonardo da Vinci and his drawing *The Vitruvian man* (based on the writings of the Roman architect Marcus Vitruvius Pollio[77]). Reminding the idea of a *kinesphere* as advanced by Laban (one could also call this square-shaped frame a *kinesquare*), there were many reasons behind my choice of employing the use of this limitation.
First, the limited range of movement was not placing the pressure of having to engage in actions that would encourage an unneeded "extrinsic posture", as observed by Hubert Godard. In other words, the students were able to disengage from superfluous postural disturbances which are usually thought necessary when having to move in bigger spatial developments, and instead observe the subtle adjustments needed to control the body in

[77] https://blog.world-mysteries.com/science/vitruvian-man-by-leonardo-da-vinci/ retrieved 10.05.2019.

a narrower space. This leaded to increased awareness on processes that happened in the core area, as a synergetic point and facilitator for controlled actions.
Second, making space “visible”, literally offered a frame of action, providing clear points of reference in actually shaping the movements. During the first exercises which were directed at floor technique, the visual references posed visible challenges, and at the same time opened the way for clarity in movement. This was connected with a clear conceptual development of the class, which observed a precise use of space: laterality- the line crossing the chest between the open arms, the head-feet line of action, spiral trajectories, horizontal and vertical planes, diagonals and mixtures of all the above.
Third, given its limitations, a narrower surface for movement has the potential to enhance proprioceptive activity, leading to a clearer awareness of the gravitational pull. This can help identify and employ more organic movement patterns based on sustainable kinetic chains, which can lead to an increased level of control and speed. This was reflected in the last part of the training which contained a movement phrase with rapid changes of directions, fast spatial developments and shift of levels, all the while remaining confined to the limitation of the square.
Fourth, I have decided to “import” not only the shape but also some of the uses of the square from sport practice. A longer sequence of running on place alternating with skipping and jumping, both on one and two legs at different speeds and using the spatial references of the smaller squares, have offered not only the chance of controlled use of speed, acceleration/deceleration and foot-work, but also a much needed boost in covering the aerobic practice, which challenged breath and endurance for longer sessions.



4.1. Conclusions: Taking formal personal

Our moving eyes are located in a moving head on a moving body in a moving world[78]

The theory of enaction sees the perception and action in an embodied form; *enactionists* state that *cognition is for action* and that *experience is not something we have but something we do* and is *relating to our environment* (Noë 2009, Batson 2014, p.94). The *coupling of brain, body and world* are giving space for five core values*: autonomy, embodiment, sense-making, emergence and experience* (Di Paolo, Rohde and De Jaegher 2010, Batson 2014, p.94). Glenna Batson points out that although for some dance scholars the enaction theory fails to address the movement dynamics of primal relationships and reduces the bodies only to sense-making and faculties (Sheets-Johnstone 2011; Batson 2014, p.95), there are however three *modes of bodily actions that resonate with dance experience: self-regulation (somatic realm), sensorimotor coupling (kinesthetic realm) and intersubjective interaction (mimetic, simulating realm)* (Warburton 2011; Batson 2014, p.95).

The French dance scholar Laurence Louppe writes of *the essential idea of a body not given but discovered, even invented*, while Susan Leigh Foster relates the methods of learning to how one is going to perform: *the repertoire of metaphors learned in class functions not only to define the dancer's body but also to establish the epistemological foundation for performing dance* (Louppe 1997; Foster 1997; Coogan 2016, p.50).

Choreographer Yuval Pick argues that there is something from *demonstration* that does not remain only in the context of teaching/choreographing, but will also be visible on stage, both in the body posture and in the mind-set of the performer; he differentiates between *being and demonstrating-being is not demonstrating* (Coogan 2016, p.151). In his vision, that is due to how one studies dance, where the achievement of motor skills is very important, requiring to be demonstrated. For him *to be is a skill. Virtuosity is not only the ability to do ten pirouettes, it is also taking risks and evoking interest in yourself while doing an action or task. This is virtuosity* (p.152).

In general, formal dance training has a long history, in some cases decades, in others even centuries. These long periods of endurance as forms of training, in both academical and professional environment, are a testimony to their value in helping dancers achieve sensory-motor skills and the ability to navigate time and space challenges. As well, a long

[78] *Body and mind in motion: dance and neuroscience in conversation*, Batson, G., Wilson, M., (quoting Gibson 1979), 2014, p.94, The University of Chicago Press, Chicago.

history can offer a valuable source of shared experiences and contributions, enriching the practice and fuelling the improvement of its stylistic and methodological elements. At the same time, we should not forget that generally, these types of trainings were in most cases bound to a specific type of choreographic signature (for instance Graham Technique, Cunningham Technique) or to an already existing type of dance defined by a clearly shaped movement vocabulary (such is the case of classical dance technique). That means, the methodological bases on which many formal trainings have been developed are directly related to a specific type of movement vocabulary, which serves a specific stylistic environment, both in respect to its creative process and as a performative identity. Further on, this might also be linked to academic environments which are directing their curriculum towards educating young dancers following specific models, shaped by formal expectations and/or market demands, which often encourage institutional and commercial stability.

We can observe here two potential limitations.

First, the use of formal trainings, if insufficiently framed and conceptually (re)assessed, might prove to be a limited tool when approached by dance students with the intention to use it in a different direction than the one initially intended for. Here, one can take into account also the presence of a contemporary body, which could come in conflict with stylistic and historical requirements when approaching a formal training.

Second, this connection between training and choreographic direction is often a closed loop, one which will hardly encourage innovation, transformation and development, potentially having a traditionalist and conservatory attitude towards attempts to improve and advance it. Even more, the set, formal standard expected to be fulfilled when training in a specific style, will also shape its methodological choices, attempting to select and transform the students according to its requirements. Through this perspective, the long history of methodological development will become an unmatched force, shaping young students without giving them many chances of actual, profound and personal participation. This in turn has the chance to become a mass-production of well-trained, specialised dancers, possibly with a limited range and means of expression, trapped in a hierarchical embodiment where formal requirements are forcibly “removing” the experience of a living person from participation.

Pointing out the ever-increasing expectations of the contemporary dance environment and the much needed traits of being a dance professional in the 21st century, Jenny Coogan states that *such challenges increasingly demand skills in the area of critical thinking, problem-solving, collaboration, self-direction and self-articulation, the aptitudes*

of adaptability and entrepreneurship, alongside artistry, curiosity, initiative, and the forming of a highly differentiated physical practice (Coogan 2016, p.14). In a context where the form and skills that need to be achieved (such as those of formal trainings) are based on *visual modelling*[79], where demonstration done by the teacher and mirror feed-back are at the core of the practice, the abilities listed by Coogan will rarely receive a front seat. Yet, these abilities could provide a widening of practical context, which might help overcome the limitations of these trainings and render them relevant in a contemporary environment. It feels as though the contemporary bodies of those approaching historical dance trainings end up being a sort of "parasite", one that is not really invited to participate in the embodiment process at work. The person that lives in the present and is attempting formal proficiency might miss the tools to manage the bridge between "bodies living in alternative points in time", and will end-up having to struggle to leave behind actual, self-regulating processes. It is expected that one needs only to strive to attain enough sensorimotor abilities to be able to reproduce and imitate a movement vocabulary which is often created decades or even centuries ago, based on the more or less explicit wish to emulate the classical stance and beauty, as observed for example in the statues of Greek gods and heroes.

This is the point where critical thinking, collaboration, adaptability or self-articulation processes could not only bridge the temporal gap concerning the acquisition of specific movement skills, but actually support the personal development towards becoming a skilled artist possessing inquisitive abilities. One needs to be encouraged and guided towards a more participative stance in the learning process, attempting a more profound involvement, open to formal and conceptual questioning in a process of aware assimilation. One does not only practice a movement, but rather practices the habit of being globally involved in any movement at all times. The choice of using one's own kinetic perspectives as a pool of potentiality and as tools which negotiate the acquisition of sensorimotor skills, can build a performative behaviour where one engages herself in "partnering body archives" and manages to stay "present" as a political stance, where one is able to match external-formal-set-framed corporealities with her own choices and specific identity, performing an informed embodiment. It is not only about merging the personal and formal realms, or about negotiating the border between a "clean" and a

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[79] *Revisiting the value of somatic education in dance training through an inquiry into practice schedules*, Batson, G., Schwartz, R.E., 2007, Journal of dance education, volume 7, number 2, p. 48, researchgate.net, retrieved 23.04.2019

hybrid version of a formal training, it is actually about supporting the development of "kinetic personalities".

It was interesting to read the concepts within the Feldenkrais Method, presented by Jenny Coogan; they all seem to be emanating from a living person, placing experiential learning and the "invented" body (as called by Louppe) at its core, very much the opposite of trying to fit a mould or fulfil precise formal expectations. Coogan names **awareness**, **consciousness**, **self-regulation**, **agency**, **self-reflection**, **embodiment** and **situated cognition** (2016, p.23-25). When we add to that the somatic points of interest of **breath**, **sensing self and the environment**, **connectivity** and **initiation**, as underlined by Julie Brodie (2012, p.8), we see not only where these perspectives are overlapping and expressing interest for similar parameters which could enhance dance practices, but also how the human being and its physiological, neural and cognitive functions is the ground zero of any corporeal endeavour. Of course, the context is relevant and informs the method. However, we should not forget that training is not only a practice of motor skills acquisition stylistically bound to specific choreographic signatures. It is first of all a human-body-practice, which can provide a solid ground for self-discovery and control, empowering the student or practitioner to differentiate and choose the best way to employ it.

4.2. New perspectives

I believe the need to readdress formal trainings in the contemporary dance environment has been made clear. We live in a world where information travels at an incredible high speed, therefore conceptual and methodological aspects are being challenged and refreshed accordingly. The range of kinetic expression as we see it in the year 2019 is very different than that of 1960 for example, or 1900, or 1800, or even earlier than that. Historical and praxeological developments have added their imprints to dance-related knowledge, therefore now, more is possible. Hybrid types of dance training are developed probably more than ever, while new performative directions are often accompanied by specific types of physical preparation. This opens up a more complex and equally interesting discussion on what training is through the perspective of a contemporary dance performance, both on a conceptual and formal level, and how far front or back (on a historical/chronological line) can one go in order to find the right balance that will serve her/his project. While it is very important to maintain a clear focus on historical forms of training and their explicit and implicit knowledge, it is equally important to profoundly assess the context in which they are being used, since they are embedded with parameters that are often not substantiated anymore, being that from a conceptual or historical perspective. Due to their primarily formal identity, one has to take into account how their methodologies are over-reliant on a visual perspective, both in terms of learning it (demonstration, imitation, use of mirror) but also in what concerns the desired outcome: an ideal body which “exists” already and has been shaped long before one even attempts to study dance. From this perspective, I find it crucial to rethink the bases of the dialogue between teacher and student. It is not enough to only pass on what we have learned from our teachers “it should be”, we need to invest in supporting the students in participating at shaping their own body. Even if the formal proficiency is the goal, it is still of utmost importance to not forget that this needs to be acquired anew each time, with each student, in a personalised manner.

I feel that as a **movement facilitator, or promoter** (probably better terms in this context?) I should invest in methodological strategies that will help my students build their kinetic landscape. In this vein, a clear sense of what gravity does to the body and what the body does in order to navigate gravity is extremely important. As simple as this sounds, it is actually the base of one’s awareness and connection with life and movement in general, and at the same time it is as personal as it can get. Seeing the “extrinsic posture” and its

constructed identity from a metaphoric perspective, one can say that we need to get deeper, closer to our vertical line, find out where our “tonic posture” is, revealing our own “ground 0”, and from there on choosing what and especially how to do. Embodiment needs the collaboration of our body and of our mind, or else is a failed embodiment, one that will be stuck at a superficial level and remain an outsider, an extrinsic presence consuming our energy and keeping us lost in a perpetual formal desire.
In this sense, from my perspective, I have decided to further my intention in developing a training which will take a better look at how to bridge the gap between personal corporeal background of dance students and formal types of training. This is based on the research and practice supporting this thesis, and it contains personal biographical, methodological and formal knowledge, grounded on a retrospective view crystallised during my work as dancer, teacher and choreographer. With the intention to address the underlying structural and dynamic actions supporting an informed bio-mechanical functionality, somatic and anatomical perspectives will be employed to devise a type of pre-technical training, which offers an approachable practice for a wide(r) range of practitioners. The intention is to lay the conceptual and formal grounds of a tool that can be employed in various contexts, being that as warm-up, training, pre-training, in academic or professional environments, while it can also offer insight into possible methodological developments for students or performers who wish to further customise their own practice.

We need to facilitate the achievement of an intrinsic occurrence. From this starting point, one can link further to any other type of development, being that formal or somatic, yet, the basis of personal participation is the most invaluable tool any dance teacher can address in a student, no matter how skilled otherwise she/he is. The empowerment contained by the sense that one is in control of her/his own body, has far reaching consequences not only in the realm of dance education, it could also be relevant on social and political grounds.

I will end with a possibly relevant perspective on historical dynamics which are often influencing formal developments of dance practices (and maybe not only).
“Floor-work” is commonly named by dance makers the practice of creating and executing kinetic developments where they approach variations of a horizontal position of the body, which attempts to find new structural and formal propositions dealing to a different physical orientation. This will engage the body in alternative kinetic synergies, where not only the legs are offering the supportive base, but also other body parts, challenging

sensorimotor processes and enhancing awareness for core-distal movement patterns required to deal with a different approach to gravity. While this is seen as a clear departure from the classical dance perspective and connected with historical developments in modern dance, it is interesting to acknowledge the fact that the horizontal explorations of movements (on the floor) and transitions to standing have already existed long ago in a pedagogical frame. The story of Margaret H'Doubler (1889-1982), a dance teacher who more than 100 years ago used the horizontal stance of the body for the benefits of exploring movement patterns in a reduced state of gravitational pull, is a very interesting example of using an empowering somatic method which placed her students in an experiential process open for personal choices and strategies. While in the case of H'Doubler the horizontal stance was used only as a departing point for perceptual and kinetic developments, later on this evolved in becoming a formal territory which have been employed by many choreographers and has spawn a plethora of pedagogical methods. The development from a tool for kinaesthetic enhancement to that of a realm of rich kinetic expression, hints to a similar trajectory seen in Contact Improvisation, which in its inception was seen as a practice of discovery (it was initially named contact improvisations, in plural) and later on became a recognisable practice which seem to have achieved an identifiable formal presence.

While the encoding and transformation of a movement practice are important parts of its development, it should be noted that this often leads to a transformation of the general view on the practice as well. Establishing a formal vocabulary offers an external point of reference, where the identity of each movement is not anymore in the experiential realm of each practitioner, but has now gained a linguistic identity which can influence how one refers to it when attempting to learn it. This new identity has its own historical background which matured it enough to become a coded, recognisable form, and requires a predominantly visual processing, reducing the amount of proprioceptive processes of an experiential occurrence. As if a kinetic expression which initially sprung out of a sensuous, corporeal impulse has been "tamed" and "frozen" into a formalised and encoded product which can be now memorised, retrieved and reproduced.

This view is directed at possible (and actual) occurrences, where we can often see rather well trained bodies, and not so much the actual people who are globally engaged in their sensorimotor processes. I am not trying to imply a polar view which supports an experiential type of practice at the expenses of formal expression. Having a formal or stylistic cohesive and systemised knowledge has its undeniable value, which nurtures development and supports artistic and pedagogical expertise. However, if we want to be

relevant as artists who wish to communicate and who are globally engaged in their choreographic and performative propositions, we need to rely on much more than only our memory.

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