

35. Dancing the Present.

Body Memory and Quantum Field Theory

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Abstract

This chapter is intended as a preliminary attempt to draw a theory of body memory. It argues that memory processes have to do not only with the mind, but also with the body. The way of thinking the relationship between mind and body (originated by Descartes' works) is questioned, so far as the conception of the body that tends to reduce it to its physical part. Three other conceptions of the body are illustrated: Steiner's, Gurdjieff's and Merleau-Ponty's. By applying the implications of Eastern religious and philosophical beliefs on the one side and of quantum field theory on the other, the common notions of space and linear time are questioned and an alternative notion of consciousness that articulates the "space-time of the body" is proposed. It is suggested that by entering in this particular state of consciousness through different techniques, body memory can be transformed. Some empirical cases related to subjects, who seem to have entered in the "immanency", are illustrated.

The body is the only means
I have to go to the heart of things (...).
Merleau-Ponty (1968)

Introduction

This chapter argues that not only the human mind is capable of remembering but also the human body, and often they are interrelated. In the first section, I illustrate some examples of body memories. The second section shows how and to what extent Descartes' dualism between body and mind operates as a basic, taken-for-granted assumption. The third section compares three different conceptions of the body in the work of Steiner, Gurdjieff and Merleau Ponty, arguing that more complex conceptions of the body are essential to better understandings of body memory processes. In the fourth section, it is suggested to rethink the common idea of space and, particularly, the definition of "boundaries" between the body and its environment. Following Capra, the implications of quantum field theory are compared with Eastern religious and philosophical beliefs (esho-funi theory by Nichiren Daishonin). It is argued that the notion of a separation between the individual and the environment should be superseded. In the fifth section I argue that these different conceptions of body and space also require a different notion of time. An alternative concept is proposed: the "space-time of the body", which implies a different experience of time, where past, present and future are linked together. Through several techniques (such as dance therapy, "sacred movements", meditation) it is possible to enter this other modus of time experience called the "immanency". However, also in this case "boundaries through time" have to be reconsidered. Schuetzenberger (1993) argues that the memory embodied in an individual has not only to do with the biography of that individual, but also with the biographies of all his or her ancestors. Their past is embodied in the present of the individual, especially in the case of traumatic pasts. The sixth section introduces the empirical part of the chapter. It is mainly related to the emergence of traumatic memories stored for decades in a subject's body¹. All examples refer

¹ Although throughout the chapter I refer to the process of memory accumulation as

to cases of subjects who, through a specific technique, probably entered the “space-time of the body”, where past, present and future are condensed and, therefore, where meaningful transformations and changes are possible.

But to what extent is the body capable of remembering? Under what conditions can amnesia concerning traumatic pasts be transformed? While the chapter is largely theoretical, I offer an empirical reflection based on data collected through participant observation. From 2008 to 2014 I attended six week-long and more than twenty weekend seminars on diverse topics (from art-therapy to sacred dances, from family constellations to mindfulness, from shamanism to sensitive dance). The chapter's main empirical focus draws on data collected in two cases:

a) Sensitive Dance, which originated in 1990 from Claude Coldy's meeting with two osteopaths, Marie Guyon and Jean Louis Dupuy. Its aim is to achieve movement awareness through specific sets of movements performed in living contact with nature's elements (the sand of the seaside, the water and the waves of the sea, olive trees, the trees of the forest, the sand of the desert). During the seminars, which are held in natural surroundings, each dancer starts to dance his or her past. The creative movements of the dance seem to free the memories stored in the dancers' bodies, first the traumatic ones and then the more positive ones.

b) Gurdjef's movements. In this case, as the group dances the sacred movements, it draws a picture of itself, of its past and present experiences. The movements seem to create a mirror of the group's level of awareness.

1. Can the body remember?

As a field, Memory Studies has long tended to focus primarily on individual memory as an activity of the mind. For many decades the hypothesis that the body can remember has been underestimated and somewhat neglected. Renewed interest in this topic has recently emerged among memory scholars (Hahn, 2010; Haag, 2013). In this section, I illustrate several examples of body memory to propose the hypothesis that not only the human mind, but also the human body can remember, and in the processes of remembering and forgetting, body and mind are often interconnected.

'stored in'—as denoting spiritual/conscious/cognitive dimensions of retainment and repression—I suggest that 'stored on' (the body) might aid in our understanding of the configured body in terms of movements, gestures, etc.

Since the 1980s and the work of the neurologist Oliver Sachs (1985), a large amount of evidence has accumulated on the body's capacity to remember and its intelligence. Sachs described the cases of several patients suffering from "phantom limb syndrome": an amputated leg was still remembered by the body, and the patient could still feel pain in that leg for many years after the amputation. Sachs commented by arguing that this capacity of the body to remember its leg can be very useful for the subsequent implantation of the prosthetic limb. Another well-known case described by Sachs (1985) concerned a woman named Christina, whose body had entirely lost the ability to perceive itself. Her body could no longer coordinate its own parts, so that Christina could move a hand or a foot only when she was looking at it. Christina described herself as a 'disembodied woman', and this situation caused her a great deal of suffering. Her case documents that the body can not only remember, but also forget. By the process of forgetting, the body seems to be independent and autonomous from the mind. Christina could see her limbs with her eyes, and she could speak about them, but her body could no longer recognize them.

Another example of body memories relates to traumatic pasts and repressed memories (such as memories of sexual abuse retained in the body or other kinds of violence experienced during childhood and long stored in the individual's unconscious). There are several case studies in psychology on the re-emergence of such traumatic memories at the conscious level after many decades of amnesia.

However, not only in pathologies but also in everyday life there is evidence of the body's capacity to remember. Let us consider the ability of the body to remember specific sets of movements. For example, if someone tries to play a tune on the piano for the first time in ten years, at the very beginning they will experience some difficulties, and if they try to "remember" at any cost, it will probably be impossible. But if they just let their fingers move on the keyboard, a sort of miracle will happen, and they suddenly remember how to play the tune. The hands and fingers just 'do it by themselves', somehow independently of conscious thought.

This is the conclusion Sudnow reaches in *Ways of the Hand* (1978), his book on playing jazz, where he reports that the feeling he had after having acquired sufficient skill was that his hands knew what sounds they were producing and that his mind didn't have to do anything except observe them. In fact, it was only when his hands could play jazz 'in their own way', without having to be mentally trained, that the music came out best. In this case it seems that the fingers can remember better than the mind.

The same may be said in relation to sports activities. In many cases we have the experience of being able to perform sets of movements that we seem not to remember with our mind. Where has this memory been stored? Is it possible that the body can remember what the mind forgets?

In the last few years several scholars in the field have started to investigate the possibility that the body can remember and forget. One approach is to study how the body can reflect the social past, for example by analysing the consequences of war on body practices in everyday life (Koloma Beck, 2013) or by investigating how bodies are portrayed in artistic practices (Kanter, 2013). The body's memory has also been analysed in relation to ballet training (Merit Mueller, 2013). In another study the ballet itself has been conceived as a mirror in which to view crystallized parts of a common past (Hollister Mathis Masury, 2013). The main issue addressed by these studies has been the interface and the intertwining between social conditioning and individual identity in the construction and shaping of bodily memory.

2. "Clever bodies" and the mind-body dualism

Where are our memories stored: in the mind, in the body or in both of them²? In this section it is shown how and to what extent Descartes' dualism between body and mind operates as a basic assumption that is taken for granted.

Several scholars have pointed out the importance of body knowledge (Keller and Meuser, 2011). The concept of body knowledge follows from the idea of multiple intelligence (Gardner, 1983). If the body's intelligence can be acknowledged, can it be also proved that the body itself contributes to the process of remembering? There are several experiences in everyday life that seem to show that the body

² By considering this distinction, I do not wish to ignore the well-known argument raised by Norman (1988: 6) that the majority of our knowledge is not stored in our mind but resides in the world: "much of our everyday knowledge resides in the world, not in the head (...). People certainly do rely upon the placement and location of objects, upon written texts, upon the information contained within other people, upon the artifacts of society, and upon the information transmitted within and by a culture. There certainly is a lot of information out there in the world, not in the head." (1988: ix). I am just adding the distinction between body and mind.

indeed has this ability. As already mentioned, by remembering sets of movements, we can easily verify that our mind has forgotten what our body can easily remember, but only if we agree to stop “thinking about it”.

This is particularly the case of Gurdjieff’s sacred movements. One can follow the set of movements in a dancers’ group only if one stops thinking about “what will come next”. The only way to dance these movements is to follow the flow of communications among the dancers’ bodies in the group. In the sacred movements, I experience the inability of my mind to do what my body can do. The mind is always too late and it cannot follow the activities of the bodies. The dancers’ bodies seem to talk to each other and to understand each other perfectly. It is a unique experience that subverts the usual relationship between mind and body. The mind is often considered to be the intelligent master and the body to be the stupid servant. Here the opposite is the case: the mind surrenders to the intelligence of the body. The mind relies on the body and suddenly discovers its “wisdom”.

Another issue to consider is what kind of body we have in mind. Usually our idea of body is taken for granted. We envisage a physical body and also a specific relation between body and mind. The mind has control over the body. We tend to speak of the mind as an entity separate from the body. This distinction is closely associated with Renè Descartes and the so-called “mind-body problem”: *cogito ergo sum*. The mind-body dualism refers to a particular way of thinking about the relationship between the mind and the body, and it originated in the theory that Descartes (1641) developed in “*Meditations on First Philosophy*”.

Leder (1990) suggested that Descartes’ philosophy on the mind-body problem was strongly shaped by his early experience of being severely ill. This painful experience had provoked a desire to escape his body. According to Descartes, mind and body are distinct, and the mind can exist without the body. “[I think therefore I am]”: this idea is often linked with the ascendance of the disembodied rationalist view, which is still current today. It has also been argued that this separation between mind and body within modern capitalist societies has led to a sharp division between physical and mental labour (Petersen, 2007).

The idea that the mind controls the body is viewed very differently when we consider gender and ethnicity. For example, feminist scholars have directed attention to the fact that women’s bodies and minds are seen as different and differently related. They are also conceived as inferior to men’s bodies and minds (Lloyd, 1984). For women, the mind and body are more closely related than they

are for men. Women are more in touch with their bodies and prone to their unruliness (for example, during menstruation or childbirth). Hence there are implications if we consider the gendered construction of the mind-body relationship.

However, the idea of mind-body dualism is very widespread, and the ability of the mind to control the body is still not questioned, except in very specific circumstances. When we fall down, are sick, or suddenly do something in breach of the social rules on exhibiting the body in public, we seem briefly to lose control over our bodies. In these situations we are obliged to recognize that control over our bodies is only an illusion. It does not work in reality. Our bodies can be independent from our flows of thoughts and even from the ideas that we have about them. When we have a protracted and grave disease, we experience the state of being subjected to our bodies. Another conception of body and another definition of the relation between body and mind is necessary to understand this kind of situation better. I suggest that this definition is a key to unlocking dimensions of the body's memory.

3. Towards a different conception of the body

Taking this definition in hand, it is clear that must overcome the usual reduction of the body to its physical part and adopt a more robust conception of the body. Three different conceptions of the body are compared: Steiner's, Gurdjieff's and Merleau Ponty's ones.

The importance of bodily language has been recognized by several scholars: for example, Alexander Lowen (1958) has strongly criticized traditional psychoanalytic methods for neglecting the body's central role in any process of change. However, although Lowen's study was pioneering, it did not sufficiently challenge the usual conception of the body. Indeed, the physical conception of the body is usually taken for granted as the only one possible, but there are millions of people in the world who do not share this limited conception. For example, Chinese medicine views the body in a different way: the energy flow is conceived as playing a central role in keeping the body healthy. In Indian Ayurvedic medicine, the role of the chakras is central to every healing process. Similar conceptions can be found in Europe.

3.1. Rudolf Steiner and Georges Ivanovic Gurdjieff

According to Rudolf Steiner's anthroposophy (1894) there is a fourfold articulation of the body.

- a) the physical body, as a physical-material structure possessed in common with the mineral world;
- b) the life or etheric body, the source of life and growth, possessed in common with the plant world;
- c) consciousness, or the astral body, possessed in common with the animal world;
- d) the ego, or the faculty of self-awareness, which is unique to humanity.

The anthroposophical conception of the body argues that it cannot be simply reduced to its physical part. If the body that we have in mind is not only physical but also etheric and astral, can we imagine that these different bodies contribute in very different ways to the process of remembering?

A similar but slightly different conception of the body can be found in Gurdjieff's work. In his analogy of the horse and carriage, Gurdjieff (1964: 382) argues thus:

"a man as a whole (...) is almost exactly comparable to that organization for conveying a passenger, which consists of a carriage, a horse, and a coachman. (...) The body of a man with all its motor reflex manifestations corresponds simply to the carriage itself; all the functioning and manifestations of feeling of a man correspond to the horse harnessed to the carriage and drawing it; the coachman sitting on the box and directing the horse corresponds to that in a man which people call 'consciousness' or mentation; and finally, the passenger seated in the carriage and commanding the coachman is that which is called "I". The fundamental evil among contemporary people is chiefly that, owing to the rooted and widespread abnormal methods of education of the rising generation, this fourth personality which should be present in everybody on reaching responsible age is entirely missing in them; and almost all of them consist only of the three enumerated parts, which parts, moreover, are formed arbitrarily of themselves and anyhow. In other words, almost every contemporary man of responsible age consists of nothing more nor less than simply a "hackney carriage," and one moreover, composed as follows: a broken-down carriage "which has long ago seen its day," a creak of a horse, and, on the box, a tatterdemalion, half-sleepy, half-drunken coachman whose time designated by Mother Nature for self-perfection passes while he waits on a corner, fantastically daydreaming, for any old chance passenger. The first passenger who happens along hires him and dismisses him just as he pleases, and not only him but also all the parts subordinate to him."

Gurdjieff's metaphor goes beyond the perspective of the body-mind dualism and it describes the different ways in which the passenger can communicate with the coachman, the horse and the coach. In Gurdjieff's theory, the emotions correspond to the etheric and astral bodies as defined by Steiner. The idea of considering the body also in relation to its flow of energies can also be conceived as a way to apply quantum field theory to the body: the wave/particle duality explained by Max Planck and Albert Einstein. The physical body represents the particles; the etheric one corresponds to the waves. Different disciplines seem to view the same kinds of phenomena through different lenses.

It is suggested here that when considering the process of remembering and forgetting at the individual level, we should jointly consider the activity of all the different bodies and not only that of the physical one, as well as the complex different ways in which they communicate and interrelate with each other.

The phantom limb syndrome described by Oliver Sachs (1985) can be reinterpreted by considering what happened to the etheric and the astral limb when the physical one was amputated. The fact that the patient can still feel pain in that leg many years after its amputation can be better understood if one imagines that “only” the physical limb has been removed while, for example, its corresponding etheric or astral parts are still there. Another possibility is to ask oneself what happens to the corresponding astral and etheric parts of the body when an amputation takes place³ (Sheldrake, 2003). Another example: what does it really happen in a case of rape? Even if there are no signs of physical violence on the physical body of the victim can one suppose that the effects of the rape are “visible” on the etheric and the astral bodies? If one refers to a different conception of the body, all the theories and suppositions about it must be reconsidered.

3.2. The corporeality of consciousness in the works of Merleau Ponty

A very important contribution on the conception of the body is due to Merleau Ponty and the phenomenological approach. “Körper is the name that Husserl

³ The phantom image of the limb sometimes is detectable following **amputation** when a **Kirlian photograph** is taken. The Kirlian photography was discovered by Semyon Kirlian in 1939 and it consists of photographic techniques used to capture the phenomenon of electrical coronal discharges.

(1931) uses to describe precisely the "body-subject" or "body-representation": the body as it occupies a certain space and then responds to certain measures, the body as *res extensa*, reduced to mere measurement of certain quantities (weight, width, length, etc.). This description applies to any body, so much for the human body as well for other living beings. However, precisely because that definition applies to any body, it does not correspond to the particularity of the body that one is. 'The lived body' corresponds to this experience that Husserl calls "Leib"; when one feels the own body from the inside. This experience is linked to what Husserl in the *Cartesian Meditations* defines as "Eigenheit": this term refers in German to the meaning of "property" in the sense of "ownership" but also of "peculiarities". This is the body as lived unity of perception and motion. There is a continuous movement between the lived body and the body-object. The lived body (Leib) is always on the point of being inverted in objectification (Körper). This process has been described by Merleau-Ponty (1979) as "reversibility" and it refers precisely to the dynamic of the imminent reversal of roles and positions between the two types of body identified by Husserl (1931). In the final phase of his thoughts, Merleau-Ponty will adopt the term "flesh of the world" to translate the term "Leib": by doing it, he emphasizes the fact that the lived body can never be said of belonging to someone. In some way, then, the experience of the body as peculiarities of each and thus also as an "organ" of which each can exert possession and control is an experience, in the sense that it is made possible by another experience: that of being a lived body. It is the experience of the meat as inhabited by the possibility of otherness that makes the experience of "having a body" possible.

Somehow, it could be argued that the lived body can be referred to the experience of being a body and to a relationship between mind and body that overcomes the dualism implied in Descartes' theory. When the body is viewed as lived body, concepts such as control over the body and property of the own body are inadequate and obsolete. When the body is viewed merely as body-object, then, the same concepts become again central and one can stay in the illusion of "having a body" that is under the mind's control. The concept of "Leib" overcomes the mind-body dualism. The "Leib" refers to the body together with the mind. Can we argue that there is a similarity between the phenomenological concept of "flesh of the world" and Steiner's concepts of etheric and astral bodies?

4. Body and space: liquid “boundaries”

In this section I suggest to rethink the common idea of space and, particularly, the definition of “boundaries” between the body and its environment. This is made possible by following the well-known argument by Capra (1973): as he has proposed, the implications of quantum field theory are compared with those of Eastern religions. Then both of these approaches are used in this section to redefine the notion of space.

In regard to the relation between Taoism and atomic physics, in 1973 Fritjof Capra published his well-known book “The Tao of Physics”, in which he argues and documents the continuity between atomic physics and oriental mysticism. It is here suggested that this continuity can be useful in the present analysis to reconsider the relationship between the body and the environment (which represents an additional key point for understanding memory and forgetting processes).

This relationship can be viewed in light of esho-funi, the oneness of life and its environment. Esho-funi means that the inside is equal to the outside. It was first conceived by Nichiren Daishonin, a thirteenth-century Japanese Buddhist monk, who inspired a specific school of Buddhism called Nichiren Buddhism. According to this principle, although life and its environment are two seemingly distinct phenomena, they are two integral phases of a single reality. This principle removes the distinction between outside and inside, between the body and the environment⁴.

This spiritual law converges on certain consequences of the scientific law of waves/particles duality. If one considers the relation between the body and the environment in terms of particles, the idea of a boundary between the body and its environment makes sense. If one considers the same relation in terms of waves, there is no longer a division between the actor and the environment. The reason is because they are viewed in terms of energies. In Steiner’s terms, one no longer considers only physical bodies but etheric ones as well. If the body is viewed as an energy system, the scale of measurement of the distance between “me” and “outside ” can no longer be a discrete one (see also Wagner-Pacifci in this volume). It has to be a continuum, and in a continuum the distinction between inside

⁴ An interesting comparison can be done among esho-funi theory, quantum field theory and the conception of boundary and environment in Maturana and Varela (1992).

and outside becomes very complex. The boundaries of the body, those of the mind, and those of the identity seem to transform themselves deeply.

In fact, the sharp boundaries of the body depend on the conception of the body as matter composed of particles. These boundaries can no longer be discrete if one considers bodies to be condensed shapes of energies. What Nichiren Daishonin discovered during his meditations in the thirteenth century was theorized by Max Planck some centuries later. Nowadays it can be reconsidered also from the perspective of the social sciences (see Wagner-Pacifici and her call in this volume for a quantum sociology of events).

Moreover to be recalled is that, according to Capra (1973), the reality of atomic physics, like that of the mystics, extends beyond the limited schema of the oppositional poles. Because the particles are a distribution of probabilities, they tend to exist simultaneously in different spaces, and they possess a specific physical reality that lies between existence and non-existence. Atomic phenomena can only be described in terms of probabilities. The waves associated with the particles are not “real” like those associated with water or sounds. They are “probability waves”, they describe the probability of finding the particles in certain points and with certain properties (Capra, 1973). This is the paradox of particles, because we can never say that a particle is in one place, or conversely that it is not in that place. Because particles are probabilities, they tend to exist in a way that transcends the traditional duality of existence and non-existence. Capra (1973: 176-177) compares Oppenheimer’s theory to the Upanishad in two very significant passages:

“For example, to the question whether the position of the electron remains the same, we must answer “no”; to the question of whether the electron’s position changes over time, we must answer “no”; to the question of whether it is stationary we must answer “no”; to the question whether it is in motion we must answer “no.” (Oppenheimer, 1954: 146, quoted in Capra 1973: 176).

“He moves. He does not move. He is far away. He is near. He is within all of this. He is also outside of all this.” (Iśa-upanishad, 5, quoted in Capra 1973: 177).

The conception of space in atomic physics and in oriental mysticism transcends the limited idea of opposition. Shakespeare’s famous question “To be *or* not to be?” becomes in this case “to be *and* not to be”.

It is argued here that the notion of a separation between the individual (his/her body and his/her mind) and the environment should be superseded. Instead of considering the individual and his/her body as “discretely” distinguished from the environment, it is here maintained that this relation is better represented as a continuum where the inside (the body) and the outside (the environment) are reciprocally influenced and shaped.

In architecture, this new conceptualization has given rise to new notions of space where the boundaries between the home and its environment are not clearly defined. There are in-between spaces not clearly recognizable as “inside” or “outside” the home. Examples in this regard are the “ville-en-plein-air” projects by the Japanese architect Shigeru Ban or the BE-FU Design Projects in the Shinagawa House.

The implications of quantum field theory can be recognized also in the social sciences. Are our bodies either matter or energies? Or are they both of them?⁵ And if they are also energies, can we still conceive the inside/outside distinction as a “discrete variable”, or does it make sense to substitute it with a “continuous variable”? To what extent does this reconceptualization of the body/environment boundaries require reconsideration also of remembering and forgetting processes at the individual level?

5. The past as bodily present: the “space-time” of the body

In this section it is argued that these different conceptions of body and space imply a rethinking of time. The concept of “space-time of the body” here proposed points out a different experience of time and a different state of consciousness, called “immanency”. It is also suggested that through different techniques (such as meditation or breathing exercises) it is possible to enter in this different state of consciousness, where deep transformations are possible and where linear time seems to some extent to become “reversible”.

In regard to body memory I propose a reconsideration of the linear conception of time. On this point modern physics can be helpful. For many centuries it was believed that time and space were intrinsic parts of reality. Several research

⁵ The concept of “Leib” by Merleau Ponty seems to be very useful to describe the duality of particles and waves.

studies on memory seem to assume that the linearity of time is intrinsic to the nature of events themselves. However, contemporary atomic physics (but also phenomenology and social constructivism) has documented that the concepts to which we refer in order to understand and describe reality are not aspects of reality itself, but depend on our cognitive processes. They are created by our mind: they are part of the map, they are not the territory (Korzybski 1933: 58; Bateson, 1972; 1979). Oriental philosophy, contrary to that of ancient Greece, has always maintained that space and time are constructions of the mind. The Eastern mystics related space and time to special states of consciousness that they were able to overcome through meditation. They thus discovered that those concepts are not intrinsically “true” but represent only states of human perception (Capra, 1975: 188-189).

The theory of relativity in modern physics came to the same conclusions. The temporal order of an event is not independent from the observer of the event itself. According to Einstein, also the temporal determination depends on the observer. In fact, light needs a certain period of time to reach an observer, so that there is an interval of time between the event that happens and the ability of the observer to see it. The duration of this interval depends on the speed of light. For example, we see the sun as it was eight minutes ago, not as it is exactly now while we are observing it.

If we consider different observers moving at different speeds, it can happen that they arrange the sequence of the same events in a different order. If the speeds are ordinary, these differences are so marginal that they are almost invisible. But in atomic physics, where events are interactions among particles, the speeds of the particles can be close to that of light. These differences can therefore become important. The Newtonian notion of space must be abandoned, and so must the traditional conception of time. This is exactly the contention of the Eastern mystics, who maintained that time and space are only “labels”, not ontological realities. They are terms that originate from the language of the observer, and they depend on his/her specific mode of cognition (Hacking, 1999; Franck, 2003). Even if from a different perspective, phenomenologists (Husserl, 1905) and several sociologists of time (Bergman, 1992) agree on this point: they consider the conception of linear time as “a social construction” or as “a construction of the mind”.

On applying these considerations to the body’s memory, the linear conception of time seems to be adequate for conscious memory (the memory of the mind). The

mind can only relate to events that have already happened, as stated by Rollin MacCraty (see this volume). There is however another kind of knowledge related to the body (Rollin MacCraty calls it “knowledge of the heart”) that seems able to participate in the creation of the reality while it is happening.

Body memory seems to correspond to the unconscious part of our memory – that part of it which is incorporated or stored in the body⁶. It is here suggested that the bodily memory requires another concept of time and precisely the one employed by atomic physics. It is proposed here to call it “space-time of the body”.

From this perspective, linear time is a social construction and also a scientific construction of Newtonian physics. It cannot be viewed as the “sole modus of experience”. The body introduces another experience of time where past, present and future are linked together. There are several techniques with which to enter this other modus of time experience, such as yoga exercises, family constellations, dance therapy, “sacred movements”, sensitive dance, breathing practices, water meditation, walking meditation, Vipassana meditation, and many others. In many of the practices mentioned, the body represents a door through which to enter a condition where time is suspended, where the past is the present and the future. It has been called “immanency” and it is a state close to us and not impossible to reach. Buddhist monks called it “eternal present” as they described it as absolutely still. They achieved this state of consciousness through meditative practices. In fact, meditation is a way to change the relation between mind and body, to suspend the mind’s usual control over the body so that we can listen to that silent body talk within us.

From the perspective of immanency, the past can be viewed as bodily present, as incorporated in the present state of the body: a sort of tacit knowledge or passive modus that affects what we feel, what we think, how we react to events, what we remember and what we forget. From the perspective of immanency that linear conception of time usually taken for granted in everyday life seems to become partially “reversible”. The past embodied in the present can be transformed, and it seems to share some of the characteristics as particles: it has more to do with the distribution of probabilities than with solid events. This past seems to exist as present and it seems that it can be transformed. Following this argument, the change of the past into the present can change the past itself and its future. From

⁶ It is very important to note that the English term “body” does not correspond to the German term “Leib”, but instead to the term “Körper”. In this chapter the notion of body is intended in the sense of “Leib”. Therefore, it is intended as body plus consciousness.

the quantum physics perspective, what has just been stated can be translated into scientific language.

This specific experience of the body (which can be reached, for example, through meditation) can suspend the experience of linear time. It is useful also to recall that in everyday life we live only one part of our existence in linear time. When we fall asleep, for example, we enter another reality where linear time is suspended. Here it has been argued that the body's memory has to do with two different modalities of time: the linear and the immanent ones, the so-called eternal present. As we will see in the next part of the chapter, the data collected in the empirical study are very closely related to this notion of the body's "space-time".

5.1. Space-time of the body in the family system

As for space, it is important to rethink the idea of "boundaries through time" within taken for granted notions of time. In this section, following Schuetzenberger (1993), it is argued that the memory embodied in an individual has not only to do with the biography of that individual, but also with the biographies of all his or her ancestors.

Here the question to consider is whether body memory has to do only with the biography of the individual. Also in this case, it is probably important to reconsider the usual belief in this regard. We can observe also social dimensions at work in the body's memory. Anne Ancelin Schuetzenberger, the French psychoanalyst (1993), argues that the memory embodied in the individual has to do not only with the biography of that individual, but also with the biographies of all his/her ancestors. Their past is embodied in the present of the individual. Especially in the case of traumatic pasts, the trauma is still alive, and its effects shape and affect the present of the descendants in the family system. Schuetzenberger (1993) recalls the cases of patients suffering from the "anniversary syndrome". This syndrome consists in the fact that an individual has a very serious accident or disease on exactly the anniversary of when the same incident occurred to one of his/her ancestors. The number of surprising and unexpected coincidences found by Schuetzenberger is so high that it is difficult to consider them as purely random, as only "coincidences". According to the French psychoanalyst, there must be some forces at work whereby the individual implicitly remembers the crucial dates of his/her ancestors' lives, and which let him/her reproduce them by re-experiencing the same traumas exactly on the same dates. The most interesting

aspect of this syndrome is that the patients considered by the author are entirely unaware of these anniversaries. If asked, they know nothing about these traumas, which are discovered during therapeutic sessions through detailed analysis of their family histories. They experience disasters or dangerous diseases on the same dates as their ancestors without knowing anything about those events. Where is this memory stored? And what kind of memory is it? Schuetzenberger (1993) maintains that when these dates are revealed to the family system, these repetitive dynamics vanish. Where are these invisible memories stored if not in the patients' minds? Are they stored in their bodies? And how are these memories transmitted across generations, if no one speaks about them? Certainly not through family conversations, as they have long remained tacit and invisible.

6. Body memory and the dance of the present

This section illustrates the empirical part of the chapter and refers to the emergence of traumatic memories stored for decades on a subject's body. All the examples that will be proposed refer to cases of subjects who, through a specific technique, probably entered the "space-time of the body", that is the specific state of consciousness called "immanency", introduced and explained in the fifth section. An individual's memory can be distinguished between the conscious part (what the subject recalls and is stored in the mind) and the unconscious part (what the subject has experienced as important but does not recall because, for example, it was too painful – s/he was a child, it was an act of abuse – and for some reason s/he did not at that time have the resources to cope with it). The unconscious memories are probably stored in the body. The emotions that s/he could not live are probably conserved in the body waiting for an opportunity to emerge again and be transformed. As soon as something similar happens outside, the individual seems to reactivate the same "old" pain, but usually without being aware of it. Since the past is not recognized with all its suffering and pain, the individual seems to be imprisoned by the past. Creativity in everyday life appears to be very limited, and the individual tends mainly to reproduce old schemata in every area of his/her life: when something happens, s/he does not respond to it in the present, but goes back to the past. S/he responds to the present act with projection of the past (the memory of which has remained unconscious for several decades and stored in a part of the body).

It can accordingly be said that the past is bodily present, and if the individual has, for example, suffered sexual abuse as a child, and if this memory has remained unconscious over time, s/he will develop a series of psychological disorders (depression, panic attacks, etc.) and will probably overreact to all situations that for him/her have a link with that latent memory. This trauma will probably operate as a tacit *modus* that profoundly affects and shapes the etheric and the astral body of the abused individual. What happens when this unstable equilibrium is challenged by a bodily practice?

It is not the intention here to reduce body memory to this repressed part of the memory alone. As said, just as in many sport activities, in dancing, in playing music, so in several bodily practices there are various routines at work. Body memory has also to do with the remembering and forgetting of routines and sets of movements that are not necessarily linked to traumatic experiences. The following empirical part of this chapter, however, will relate mainly to results concerning the emergence of traumatic memories stored for decades on the subject's body.

6.1. Dancing the Past

Over the past six years I have attended six, week-long seminars and more than twenty weekend seminars on different topics (sensitive dance, Gurdjieff's sacred movements, mindfulness, meditation in water, family constellations, psychomagic, shamanism) where I conducted participant observation.

During these experiences I had many opportunities to witness what might appear to be "prodigious" events. All these seminars had the purpose of awakening the body's knowledge, of teaching participants how to achieve a state of mindfulness. They involved several different body practices, such as silence for several days, breathing techniques, group meditation, meditation in water, and learning the use of a pendulum. It is here suggested that probably through these very different techniques the subjects (whose experiences will be illustrated in the next pages) were able to enter in the "space-time of the body". In other terms, they entered, even if just for few seconds, in that particular state of consciousness, that can be called "immanency". As it was argued in the previous sections, in that particular state the usual notions of space and time are no longer appropriate. In that state, linear time seems to disappear. Time seems to become somehow "reversible". There is a kind of eternal present. Also the space seems to transform itself, as the boundaries between inside and outside can no more be viewed as "discrete". In

that state of consciousness deep changes become possible and the memories of an individual can be deeply transformed, especially in the case of traumatic memories. In the following pages several cases are presented, but they represent just a few examples among many others that could be illustrated here.

During a seminar on sensitive dance, conducted in 2010 by the dancer Claude Coldy in an olive grove at Tuscania, a small village in Central Italy, various shamanic techniques were proposed to the participants. In one of these exercises, a participant – with naked arms and legs (so that the sensation of the earth on the skin could be felt more intensely) – had to be fully covered with earth by a group of three other dancers. The reactions of the participants in the exercise were very different. In some cases the subject enjoyed the sensation of the earth on the skin, but some subjects suffered panic attacks. One woman, for example, was lying on the grass during this very simple exercise, and she was entirely covered with earth except for her head. It was not a large quantity of earth, but the skin's contact with the earth was very intense. The woman suddenly began to scream. Her belly seemed to boil on contact with the earth. Large bubbles appeared and disappeared on her belly while she cried desperately. Around her, other participants were reacting to the same experience with joy, and they were entirely quiet and at peace. Some months later the woman discovered during a family constellation that she had suffered sexual abuse during childhood. The forgotten memory of this abuse had remained hidden in her body for many decades, and that exercise during the sensitive dance seminar had provided a sort of outlet for this latent memory to become visible again.

In the same seminar, one year later, the participants had to dance blindfolded on an olive tree (not too high, but still high enough to be dangerous), and they had to follow the instructions of another dancer in order not to fall off the tree. This simple exercise revealed their capacity to trust others; it also revealed the kind of relations that the participants' "inner child" still had with their parents. It was impressive how some participants were overwhelmed by panic, while others could joyfully move and dance among the branches of the olive trees. After the exercise, when asked about the experience, a young man who had been unable to perform the exercise because of the fear of falling recalled the very difficult relationship with his father during childhood.

During another sensitive dance seminar, held in 2011 in Maratea (a small town in South Italy on the coast), the exercise was to sit on the beach looking at the sea very early in the morning. It was a breathing exercise. A woman was performing the

exercise in a quiet state of meditation when she suddenly started to cry. She was silent but her eyes were full of tears. She continued to cry in silence for several minutes. After the exercise she told the group of the dancers seated in a circle on the beach to comment on her experience: she had suddenly felt a very strong pain in the burst, like a stone. Her suffering was extreme, but then the “stone” abruptly disappeared and she felt relief. The day after, she suddenly remembered a very painful episode in her childhood, which she had totally forgotten for many decades.

In 2013 during a seminar on Gurdjieff's sacred dances held in Centeno (a hamlet in Tuscany, Italy) there was a special session in which women and men had to dance separately. So I took part in the women's dances in an old church. The movements proposed were very easy to perform, but for three sessions (one session of movements usually lasted two hours) a particular dancer could not do one of these very easy movements. When later reporting on her experience to the group of participants, she said that she was perfectly aware that the specific movement was very simple, but for her it had been almost impossible. On the fifth day, during the women's dances, the woman suddenly found herself able to perform the movement properly. She felt as if something had loosened in her heart and she started to cry in silence: indeed, she seemed overwhelmed by a flood of tears. She could explain neither why she was crying so much nor why she was suddenly able to perform the movement.

In another session of Gurdjieff's sacred dances during the same seminar in 2013, one participant recalled that at the end of the session of movements she went out into the garden. On passing through the door, she made a gesture with her right hand to replace her scarf on her left shoulder. She told the group of participants that on making the gesture she had felt “sisterhood” with all the women who had made the same gesture over the centuries. She had felt “the immanence” of that gesture, as if all the generations of women who had performed the same action for centuries were present at exactly that moment and were making that gesture simultaneously with her.

During one family constellation in Borgo Pignano (near Volterra in Tuscany), a woman suddenly re-experienced the death of her father's sister (her aunt), who had been killed by a bus while she was riding a bicycle in a street of a large Egyptian city at the age of eleven. The event had been so traumatic for her father's family that no one had ever spoken again about the aunt: she had “disappeared” from every family narrative. The woman, however, had the aunt's name as her second

name. For her it was extremely traumatic to experience this family trauma again during the family constellation. The woman suddenly told the group that she could now understand why she had been so afraid of riding a bicycle since she was very young. After some months, I met this woman again by chance, and she was riding a bicycle in the traffic of a large Italian city. I was astonished because I remembered her fear very well. When I asked her if she was no longer afraid, she replied that now her dead aunt was protecting her so that her fear had gone.

On many occasions during the seminars, I witnessed a shift from dancing the past in the present to dancing the present in the past. This is the flow of transformation. Instead of the schemata of invisible pasts being reproduced in the present, once these pasts become visible they can be forgotten, or at least can be allowed to go. The subject is thus freed from the burden of the invisible past and of its hidden memories. The past and the heritage from ancestors transform themselves from a burden and a prison into a resource, into a stabilizing anchor for the person's future life. I have mentioned only a few examples, and many others could be cited. The feature shared by all these experiences is that they were felt and interpreted by the subjects to whom they occurred as moments of profound transformation of something traumatic related to their past or to the past of their ancestors. A possible interpretation is that these deep transformations were possible because they had been able to enter the "immanent present" through the techniques described above. They had entered the space-time of the body, and from there they had been able to transform their past. This hypothesis cannot be proved, but what the interviewees recalled can be experienced.

7. Conclusion: outlining a theory of body memory

This chapter is intended as a preliminary attempt to draw a theory of body memory. It has been argued that memory and forgetting processes have to do not only with the mind, but also with the body. The way of thinking the relationship between mind and body (originated by Descartes' works) has been questioned, in so far as the conception of the body (usually taken for granted) that is reduced to its physical part. Three other conceptions of the body have been illustrated (Steiner's, Gurdjieff's and Merleau-Ponty's ones). Also the common notions of space and linear time have been questioned. By referring to the well-known argument by Capra, the implications of Eastern religious and these of quantum field theory have been compared and applied to the notions of space and time.

More specifically, the usual notion of boundaries in space has been redefined in light of the esho-funi theory and the quantum field theory. The usual notion of boundaries through time has been reconsidered by referring to the “anniversary syndrome”. Then, a different conception of space and time has been proposed: “the space-time of the body”. It has been suggested that by entering in this particular state of consciousness (through different techniques), body memory can be transformed. Some cases of subjects, who seem to have successfully transformed their traumatic experiences by entering (even if just for few seconds) in the “immanency”, have been illustrated. In conclusion, by trying to understand how body memory works, this chapter has proposed to abandon our common beliefs and to consider the processes of remembering and forgetting from the perspective of the particles, where the fixity and the stability of the matter seem to vanish and the waves seem to float in the eternal dance of life.

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