

From Science to Dance Ensaio Between Lab and Studio

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Abstract This text is a reflection in action of an artistic process based on a scientific research. ENSAIO is the choreographic project that resulted from the translation mechanisms of laboratory concepts to a bodily approach, where it proposes a possible mainstreaming of artistic and scientific processes combined. This project joined artistic higher education schools in dance and scenic arts (ESD and FCSH) and *Pola-vieja lab*, a neuroscience research lab in Champalimaud Foundation - Center for the Unknown. This text aims to reveal the creative choreographic and performative potentials hidden in this scientific research concerning neurosciences. Identifying cross materials to artistic and scientific processes, it was possible to design a structure of the creation process and the construction of a choreographic performance. The common platform has been found in the process of translation and the definition of the same concept substrate, which made possible the approach of the two instances: studio and laboratory. One of its key features is the promotion of the communication among its agents: scientists and dancers. And the possibility of modelling and absorption from what it comes from this sharing and collaboration. The methods and the choreographic procedures mirrored and promoted this sharing and, therefore, the involvement of the body. Where, the body is the agent able to reflect and trigger this process, a body as an essay that is constantly in research. A body able to coordinate between various media and to expand the reflection on itself. Although science and art are individual instances that inevitably specialise and segregated away. Therefore, this text focuses on examples of cross-thinking of both scientific

and artistic cultures, and the articulation of the theoretical and practical bodies in a practice-as-research on the development of the ENSAIO creative process.

Keywords: Art, science, transversality, dance, choreography, neuroscience.

1. Introduction – ENSAIO, a Product of Circumstances



Figure 1 – ENSAIO © Marta Marques, Leiria, Portugal 2016

ENSAIO is a Portuguese word for ‘trial’, ‘experiment’, ‘testing’, ‘test’, ‘rehearsal’, ‘assay’ and ‘essay’. In this context, is a choreographic performance that is a product of personal and artistic circumstances, combining science and dance in its creative process. As a biochemist and a dancer, the interest arose in the combination of dance and science, since there is an enormous artistic potential in science that can be used by the body and through it. ENSAIO intends to explore scientific research and science as artistic creation material to think about its performative potential. Through the process of creation and artistic research, supported by spe-

cific scientific research, it proposes and presents mechanisms of transposition and translation of scientific premises for artistic creation and the possibility of being able to manifest themselves from the choreographic and performative point of view. This text explores and reveals this performance as a case study to think about the ways that a specific research in neuroscience based the development of an artistic research. *Product of Circumstances* (1999), is a performance created and interpreted by Xavier Le Roy described as a “performance-lecture hybrid”.¹ Le Roy presents his circumstances (at the beginning of his performance) as follows:

I began to take two dance classes a week at the same time that I started to work on my thesis for my PhD in molecular and cellular biology. It’s been now eight years that I have submitted my thesis and stopped to work as a biologist.²

“The study of Oncogenes Expression and Hormonal Regulation in Breast Cancer Using Quantitative in situ Hybridization”, is the title of the molecular biology thesis that Xavier Le Roy presented in the performance. However, this presentation is articulated with movement. In his dance performance solo, there is an integration of various elements, such as images of cancer cells, stretches, classical ballet positions, a pulpit. The performance lies between the scientific and artistic milieu, where he states that

All these remarks may sound pretty naïve, but I had the feeling that science was about understanding problems made up to give us the impression and satisfaction of total control of questions on, for example, the human body. I had another idealistic idea of science, and slowly I lost my belief in it. I lost this very distinguished belief to science, which is presented to the right of access to truth and to a different world.³

Ahead, in the discourse, Le Roy says that thinking has become a bodily experience. It also states that science imposes the answer to problems

1 Rocco, 2011, para. 5.

2 Roy, 1999, paras. 4–5.

3 Xavier Le Roy quoted by Sabisch, 2011, 38.

that no longer relate to the original question, but to its transformation. There is, in this performance, a “performative assemblage”,⁴ that is, a combination of a singular body, a concept body, and an experimental matter. The possibility of playing in a triad of body, concept and experimental matter are synergistically and, from a performative point of view, a potential for artistic creation in the context of ENSAIO. This text, based is an action-reflection process, aims to combine a theoretical with a practical body. Underlying a journey from the distance between art and science by “two cultures”, to the possibility of being united in the performative context. And, as Le Roy, ENSAIO is a product of circumstances, is a performance between dance and science, between the laboratory and the studio, and, in this betweenness, questions the boundaries of artistic creation. This is a product that wants to think about these boundaries, and how can artistic research meet scientific research. This text is a case study that wants to think about the artistic creation and what is underlying to it, tries to unravel this process to reach its core. There are some lines of force that connects artistic and scientific research. As an attempt to go ahead of the theoretical thinking, this text aims to think about practices and how they can recall to the philosophical field. There are some important references to actual projects or choreographies to frame theoretical aspects with artistic practice because it aims to relate the theoretical and the practical approaches. After consolidating the theoretical body, the text immerses in the practical body, establishing the relation between choreographic methods and the transversally mechanisms proposed in the creative process of ENSAIO.

2. Two Cultures –the Gap

This choreographic project consists in the combination of laboratory and studio research, so it is necessary to understand the relation between the themes of art and science and the cultural and social aspects that underlie them. Thus, in the twentieth century, by the figure of Charles Percy Snow, he questioned the separation of literary culture and scientific culture. Because of his academic specialisation, Snow criticised the

4 Sabisch, 2011, 33.

opposition between human sciences and exact sciences, arguing that they represented two equivalent spheres of knowledge.⁵ In what was defined as two cultures, Snow argued that

(...) the intellectual life of the whole of western society is increasingly being split into two polar groups (...) at one pole we have the literary intellectuals, who incidentally while no one was looking at referring to themselves the 'intellectuals' as though there were no others (...) at the other scientists, and the most representative, the physical scientists. Between the two a gulf of mutual incomprehension (...) hostility and dislike, but most of all lack of understanding.⁶

Snow, when referring to the scientific culture, claims that this must really be a culture, not only in the intellectual aspect but also in the anthropological sense. That is, its members do not need to fully understand each other, yet they have common attitudes, norms and standards. This common platform transcends other mental patterns, such as religion, politics or social class, where "(...) biologists more often than not have a pretty hazy idea of contemporary physics; But there are common attitudes, common standards and patterns of behaviour, common approaches and assumptions".⁷ To unravel the reason for the separation of the two cultures, the author points incomprehension as the main factor, that is, "(...) total incomprehension gives, much more pervasively than we realise, living in it, an unscientific flavour to the whole 'traditional' culture, and that unscientific flavour is often, much more than we admit, on the point of anti-scientific turning".⁸ At the outset, there seems to be no place where cultures are to be found since little science of the twentieth century was assimilated into the art of the twentieth century. Even when the scientific lexicon was assimilated by poets, it was often misused. Snow describes that there is apparently no place where the union of the two cultures is

5 Lopes, 2010.

6 Snow, 1961, 4.

7 Snow, 1961, 10.

8 Snow, 1961, 11-12.

possible, “The clashing point of the two subjects, two disciplines, two cultures - of two galaxies, so far as that goes - ought to produce creative chances”.⁹ What is questioned, in this way, is that there is the possibility of integrating and evoking the transversality between these two cultures. In this scenario, he says that there must be an assimilation of science in art and that can be used naturally as another type of mental experience and being a part of art itself. As a solution pointed out by Snow, for the integration of the scientific culture in the literary culture, this should happen with the alteration of education, that would open in a perspective of interdisciplinarity. The interdisciplinary view of education is described by Simsek & Hacifazlioglu where they define interdisciplinarity as the ability to integrate knowledge and ways of thinking in two or more disciplines or areas of knowledge to produce a cognitive advance. The discipline is considered a culture rather than a body of knowledge “(...) the discipline is different to the subject - a subject is a knowledge base, whereas a discipline is a tribe, a culture, a guild. The discipline is a culture rather than a body of knowledge per se”.¹⁰ It is argued, by the authors, that each discipline has a language with their own territories where the development of interdisciplinary understanding takes time, since “(...) interdisciplinary thinking is a complex skill requiring certain sub skills” (Simsek & Hacifazlioglu, 2011, p. 773). The capacity for integration and transdisciplinary thinking has a series of requirements for it to exist in its fullness.

Although there is a gap between the two cultures defined by Snow, how does the concept of interdisciplinarity arise in the performative context? In the broadest sense, Richard Schechner describes the performance as in its ability to mark identities, curving time, reshaping and decorating the body, and storytelling. “Performance emerges as a crosscutting concept from art, rituals to everyday life. It is a set of ‘restored behaviours’, ‘twice-behaved behaviours’, performed actions that people trim for and rehearse”.¹¹ In its ability to cross several domains, it is suggested that there is a transverse germ that serves as a bridge between cultures. Stephen Connor argues that the postmodern condition of art manifests itself

9 Snow, 1961, 17.

10 Parker, 2002, quoted by Simsek & Hacifazlioglu, 2011, 743.

11 Schechner, 2002, 28.

in the multiplication of centres of power and activity and a “dissolution of every kind of totalising narrative”.¹² In the story of the performance, Rosaline Goldberg states that it is in the seventies of the twentieth century that performance is distinguished as “(...) independent artistic expression”¹³ and finds its apogee. So, the artists sought, a practical realisation of their formal and conceptual ideas”. The author points out that, historically, performance emerges as a medium of communication and questioning about a variety of concept of art and the way it relates to culture. The claiming seed planted in “dissatisfied artists”¹⁴ places performance as a mean of mixing the arts and other material means into a diverse range of combinations. Therefore, according to Kennedy, between the 60s and 70s, the notion of performance was reinvented where artists began to reject formal orthodoxies searching for new forms of artistic expression. “The resulting landscape that followed was a world of performance that attempted to break through conventions and defied easy definition”.¹⁵ Nowadays artists seek new ways of reflecting once they are in an increasingly digital and global culture, theatrical dance in Europe has felt a growing collaboration and cross fertilisation between forms of dance, theatre, visual arts, cinema and technology. This trend for cross-fertilization is certainly not unique to the dance world “(...) to create multi-layered performances (...)”.¹⁶ In the words of Tim Etchells, “(...) when (artists) incorporate other aspects of other forms of their work they do not have to communicate differently, to change the kind of experience they are offering up”.¹⁷ It is concluded, through these examples, that there is, in performance, more specifically in dance, the possibility of integration of other arts. Therefore, exposing its aggregating genesis where it is suggested that it is also capable of integrating other aspects of culture, as science.

12 Kennedy, 2009, 64.

13 Goldberg, 2012, 7.

14 Goldberg, 2012, 10.

15 Kennedy, 2009, 64.

16 Kennedy, 2009, 64.

17 Kennedy, 2009, 96.

3. Dancing the Boundaries

The opportunity to work with new boundaries stimulates the artistic creation and is an attractive factor for the artists themselves. Apart from the joining of arts such as theatre, dance or painting, it is possible that science is also stimulating artistic creation and an element integrated into the performance. An example of this interest can be seen in *Quantum* (2013), a dance piece choreographed by Gilles Jobin, that resulted from an artistic residency at the CERN (Conseil Européen pour la Recherche Nucléaire) in Genève.¹⁸ In fact, Butterworth & Wildschut, (2009), reports that the reasons for interaction with other disciplines are numerous: personal inspiration, new ideas or approaches, the artist's desire for new knowledge, or inspiration in new contexts. In a way of broadening his own experience as an artist in the performative experiments.

Ascott (2000) states that art and science can create new ways of meeting each other by fostering the process of collaboration. *Choreography and Cognition* was a joint research project promoted by art researcher Scott DeLahunta and choreographer Wayne McGregor, who brought together professionals from cognitive science and dance with the goal of understanding the link between creativity, choreography and the scientific study of movement and of mind. This work focuses on issues related to collaboration between the arts and sciences, regarding the relationship of dance with other disciplines. It is an important milestone in the collaborative process as it covers various dimensions of science and art. DeLahunta, Barnard, & McGregor (2009) states that *Choreography and Cognition* began as a discussion about the development of new research in the choreographic process, which could foster new alternative and creative approaches to improve the collaboration processes. The curiosity of Wayne McGregor was the starter of this project, initially interested in Artificial Intelligence (to which he dedicated a solo *Cyborg*, 1995) and the possibility of creating an autonomous choreographic agent. This project would require not only a better understanding of the functioning of the mind and the 'intelligence' involved in the choreographic creation, also it would be inevitable to cooperate productively with scientists in the field

18 Jais, 2013.

of cognition and neurology; and a social anthropologist for the fieldwork and mediation of the collaboration process. In a first phase, there was some meetings between cognitive scientists, these, it was possible to guarantee the funds and the definition of the research scheme. In preparation for phase two, three objectives were developed to establish the conditions that could suggest starting points for the project. (1) **Shared objective**: to look for connections between choreographic processes and the study of movement and brain/mind that are scientifically and artistically interesting. (2) **Artistic objective**: to integrate the participation and the contribution of the scientists in the development of the choreographic process, maintaining the integrity of the ways of looking and questioning concerning their respective areas of research. (3) **Scientific objective**: to formulate specific questions and methodologies that arise from individual interests the project in the context of the creative choreographic process of research. After establishing points of interest between dancers and cognitive scientists, it was possible to conclude that collaborations between arts and sciences find some generic points of difference. Both domains are involved in research and design processes, but these processes are markedly different in each field. For example, for science to progress, it needs to create a simple model of the problems it seeks to investigate. And it is required that someone can set up the same investigation and get the same result. For the artists, a period of investigation or research may also involve a larger problem, but here the process tends to be dominated by self-reference. As a work of art as the result, this process must be unique in a defined time and space. In a conversation between scientists, Scott DeLahunta asks Phil Barnard (PB) to describe his experience of the first meeting with Wayne in rehearsal studio.

PB: The invitation to observe Wayne generating movement material for a future dance piece came with the offer that we could each do some empirical research in collaboration with his dance company. (...) As I watched Wayne work developing his movement material with the dancers, (...) I realised I did not have a clue what was going on in his mind. The questions in my own head suddenly changed. What on earth was he seeing in what the dancers were doing? (...) Choreographers would certainly not have their own framed

ideas about this. As a cognitive scientist, I was entirely in the dark.¹⁹

This interdisciplinary collaboration focused on the exchange of concepts and ideas on the importance of movement and dance, however, “(...) there is an inherent danger that the different disciplines will tend to talk to each other rather than each other”.²⁰ Wayne states that in the collaboration between art and science, it is important to be aware that neither is at the service of the other. Science cannot be used merely to serve the artist in the same way that artists simply cannot provide data to scientists. These are merely aspects of collaboration but are not, or should not be, the starting point. Also, the artistic creation that resulted from these dynamic exchanges was not the focus (although two pieces were created *AtaXia*, 2004 and *Amu*, 2005 because of the collaborations with science). Another result was the publication of *Mind and Movement - Choreographic Thinking Tools*, a didactic resource in the form of a game for teachers in choreography. According to Butterworth & Wildschut (2009), although a funding initiative or an invitation may be an attractive opportunity to encourage a collaborative process, the artist may find in this experience some difficulty. This is not to say that such encounters cannot be valuable to the artist’s development, especially after reflection and hindsight. Such collaborations may provide new ways of thinking about one’s own practice or may identify the need for re-evaluation of a personal choreographic process to determine artistic direction. New expectations can be provided by these interdisciplinary possibilities, and even if these expectations are not met, other valuable experiences may occur. *Choreography and Cognition* focused on a set of artistic and scientific reflections. That is, if, on the one hand, it was possible to analyse a choreographic method associated with a contemporary creator through a scientific method and opened the possibility to combine science in choreographic work. On the other hand, it introduced a fundamental aspect, which is related to ENSAIO, which is the communication between the studio and the laboratory and the possibility of integrating scientists in the artistic field and choreographic

19 DeLahunta *et al.*, 2009, 436.

20 DeLahunta, Barnard, & McGregor, 2009, 441.

creation. Another aspect to be emphasised is the translation of a scientific analysis into other by-products, namely, choreographic productions, scientific articles and choreographic tools. In this way, it was possible to create a symbiotic relationship between Wayne and the scientists and that, from this, other forms of the perpetuation of knowledge emerged.

As Bläsing et al. (2012) refers, dance is described as an important source of material for researchers interested in the integration of movement and cognition. The various aspects of cognition involved in dance performance and perception have inspired scientists to use it to study motor control and the links between action and perception. At where,

A focus on the structure of the body and its mechanisms identifies principles underlie the variety of training methods and performance styles. When this is allied to the perspective of cognitive science on the way that the body shapes meaning, it is possible to identify foundational principles of activity that link Story, Space, and Time in performance.²¹

An interesting aspect of the processes underlying dance observation, which has been the subject of investigations related to motor and visual effects, is related to the neurological and cognitive mechanisms underlying dance interpretation. Observing dance is more than observing a sequence of isolated gestures, just as understanding a phrase or a text goes beyond the accumulation of isolated words. Overlapping regions of the brain suggest that, despite their multiple differences in content and function, there are common, structural mechanisms underlying fundamental human behaviours in reading language and dance material as suggested by Bachrach, Jola, & Pallier, (2016). In this domain, of written and danced words, Rick Kemp (2012) summarizes three main points: (1) **The mind is “inherently embodied”**, not only in the sense that the brain operates in the body, but that physical experience shapes conceptual thinking, and that thinking operates Through the same neurological pathways as physical action (the author uses the expression body-mind as a way of describing this phenomenon of overlap); (2) **Thought is mostly**

21 Kemp, 2010, 48.

unconscious (only five percent of brain activity is conscious); (3) **Abstract concepts are metaphorical**, and their source comes from the kinetic and perceptual experiences of the material world. “These experiences generate cognitive systems that reflect our physical environments and form patterns for higher cognitive activity” (Kemp, 2010, p. XVI). That is, many of the words used for the construction of abstract concepts have in themselves a gesture or a latent movement. In this way, there is a close relationship between movement, or observation of movement, with the reading of a text so there’s an approximation of these two instances: the written and the corporal. Where there is a direct association of physical action with conceptual integration, opening a new understanding about the possibility of research and reflection from the body and to the body.

4. The Body in ENSAIO – Choreographic Process and Methods

In the creative process of ENSAIO, there was always present the possibility of translation and cross-language. Since the proposal was to translate some information in the laboratory context to shape the body work, where the main question was related in which ways a specific scientific investigation can be translated through the body. This impulse to create an artistic object from the premises of a scientific investigation was, in fact, the motor of the creative process and materialized in three phases: (1) **artistic residency** at the *Polavieja Lab*, (2) **body/creative work** with feedback between lab and studio, (3) **public presentation**. Firstly, it is important to focus attention on framing *Polavieja Lab*, which is part of the Champalimaud Foundation - Center for the Unknown (CCU). This was the group that, after a contact with the Foundation, showed greater interest in the development of a project crossing dance and science because they are interested in finding rules of group behaviour, focused on decision making and group learning. Understanding how information is aggregated, how consensus is achieved, and how the individual behaviour impacts on a group.

Our approach includes building new theories and experimentally testing them in zebrafish, mice and humans using a variety of techniques from Neurobiology, Behavioural Ecology, Molecular Biology, Psychology and Sociology. We

are also developing new tools to improve the quality of behavioural data and its analysis and adapting new technologies to study group behaviour.²²

In a broader perspective, the laboratory aims to understand social interactions by having a very diverse team with varied research interests around this problem using many ways of research. There are projects that works with humans and others that use animal models, where the zebrafish model fosters multiple research interests. This was the primarily source of material from *Polavieja Lab* that ENSAIO was outlined. The concepts of **collective behaviour** and **group decision** were the basis for the creative process, and it was from these that the whole process has triggered. For about six months, several meetings were held where information was shared within the same research group or between different groups. There was also the opportunity to attend in loco the development of experiments in neurobiology with the use of zebrafish as biological models. During the artistic residency and conversations with the scientists, there was a chance to plan the approach in the studio and how the laboratory experiments could be translated into studio experiments. Before setting out for practical work, it was necessary to understand some premises of the research work.

To understand the scientific approach, at the underground floors on CCU, it was possible to observe an experiment and its laboratory apparatus in loco. And to follow the researcher working with the possibility of answering questions about the researching in progress. This corresponded the initial approach for the artistic residency, in the place where the scientific investigation takes place. In general, this process of investigation went through several stages. In a first phase, to understand how zebrafish move individually or in groups, in terms of trajectory when influenced by factors such as temperature or light. About this topic, the main researcher states that.

My current project is aimed at understanding how early life social experience influences development and be-

22 Polavieja, n.d.

haviour. Basically, I raise fish in complete isolation or in a group and then I test how they develop and how they behave the individuals and in a group.²³

Through the application of an interview, observation and conversations with the researcher, it was possible to untangle some important issues in laboratory research to gather some data to the studio phase to design the creative process and the choreographic construction of the artistic object. To build a common ground, it was necessary to explain some questions that could give valuable information for the next artistic process phase.

1. **How does communication between fish occur?**

Fish use visual, olfactory and mechanosensory information (water movements). Fish have a very specialised system of sensory cells, called the lateral line, which is distributed along the sides of the body and to the surface of the head. These cells form clusters, called neuroms, which contains hair cells that are folded when water is moved and then translate the signal into the brain. It is like the human sense of touch, but it functions even at a distance, because the fish is in the water, even at a distance, produces waves that reach the surface of the body. Communicating is more than interacting or understanding who is around you. It implies that there is a signal sent by one fish to another. As the mechanism of communication unfolds, it is not known concretely, what is known is that fish have specific social interactions, that is, the formation of territories, social transmission of fear and school behaviour. As for the movement in shoal, the favourite model of group movement these days is that there are two main forces, attraction and repulsion. Where fish (or ants and birds) want to be close to members of the same species, but when they get too close, they increase their distance.

2. **How do you decide individually and in a group?**

The model used in the laboratory is based on two factors, private information and social information. Basically, a single individual

23 Interview to the followed researcher at the CCU.

only has access to your private information, but when others are around you can also use the information provided by the behaviour of others. It is like the restaurant phenomenon, you have your private information about whether it looks nice and seems to have a good menu, but you also have the social information of how many others have chosen the restaurant already and if there are many, it is likely that this restaurant is a good option. Imagining that two fish are trained to know that their food source is at a given point, say left for fish A and right for fish B. If there is a group of fish where they are inserted, none of them will give priority to the place that is trained, since they follow the group of fish. This mechanism of schooling is related to aspects of the survival of the species. The researchers say that a group of fish moves because of the sum of the trajectories of their elements.

3. **What is the biggest difference between being in groups or individually?**

The main difference lies in the fact that there is less access to information alone. A very important factor is also that fishes are social animals and they get stressed when suddenly alone. In addition, it has been demonstrated by another laboratory that when fish are in a group receive less stress.

With the definition of the three questions, it was possible to elucidate a conceptual substrate that would sustain the creative process and contaminate it. This substrate is related to the **group decision** and the opposition between **individual information** and **social information**. Where, the meeting of these premises focused on the studio action and modelled the approach to the creation process from the use of choreographic methods and processes to the materialisation of choreographic performance establishing a common ground between studio and lab.

After the artistic residency at the CCU, it was possible to gather some information that could be used and translated in the studio by creative approaches of cross-contamination. Regarding contamination, Petra Sabisch (2011), refers to it in its possibility of establishing choreographic relations. Moving away from the possible pejorative potential, it asserts

that implies a “(...) qualitative transformations [that] are not misconstrued from outset as the harmful effects that the contamination might provoke”.²⁴ So, contamination, forces the body to open itself to other bodies and forces it to establish different relationships and to change qualitatively. In the words of Nicolas Bourriaud (2002) “The contemporary artwork is spreading out from its material form: it is linking element, the principle of dynamic agglutination”.²⁵ The possibility of integrating science into a creative process was only possible through the creation of a method and a transversal research. In this way, it is considered that the body is, due to the impossible separation, an agent and an object, “Choreography renders the inseparability of the method and material without, however, undoing the distinction between the body and the performative method”.²⁶ Considering the issues referred above and the possibility of contamination, it was important, before undertaking the bodywork, to reflect on which approach would serve the purpose for creation. So, regarding to the evolutionary path of dance history as an artistic expression, this has demonstrated how dance can reflect on the reality and sociocultural experience of a community or group. Where singularity and individuality are part of a group since it is directly related to the definition of the contemporary dance interpreter and the democratic processes of choreographic creation. Here are several factors in evidence for building a body through the body. Since, for Fazenda (2012), “The body is agent, instrument and object”.²⁷ Where any movement of the body can be learned through training and Incorporation, that is, a non-verbal interiorization of a form and a meaning that is culturally configured. So, the concept of collaboration was an important feature to the creative process. It is, therefore, important to form a cohesive working group, however, it is vital to emphasise the individuality of its constituent elements (according to the notion of individual and social information). In parallel with the methods used in the ENSAIO, these were based on two fundamental levels: content and form. In terms of content, it was established

24 Sabisch, 2011, 19.

25 Sabisch, 2011, 21.

26 Sabisch, 2011, 21.

27 Fazenda, 2012, 61.

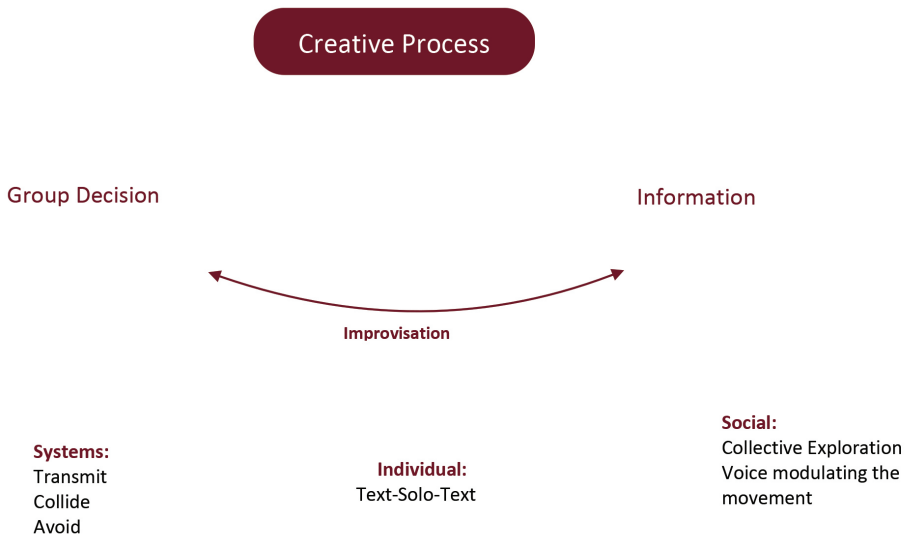


Figure 2 – Scheme with the main axis of the creative process

according to the premises of creation, the choreographic rules were in line with their basic aspects: **group decision**, **individual information** and **social information**. So, it was possible to conduct the process based on an art-based research perspective exploring the data gathered from the artistic residency at CCU. In terms of form, that is, how they expressed themselves through the body practice during the rehearsals, the research in progress was carried out based on: (1) **improvisation** structured by scores (“Systems” of Group decision and social information); (2) **creation of solos** by the dancers (individual information) and (3) **exploration of forms of translation** (text, sound or voice as a movement score). This process is represented in the Figure 2 where is possible to see the main axis that were explored o the translation of information from the lab to the studio and how it started to get a body formalization, these aspects will be developed ahead.

5. Translation Mechanisms – Founding the Common Ground

3.1 System of Group Decision and Information

In the translation of concepts from the laboratory apparatuses to the body work, different levels of contamination were tried. The initial approach was to reduce laboratory information on simple assumptions. Considering the concepts derived from the laboratory, the group of dancers started to work on the following premises: (1) Dance very close to someone; (2) Dance too far; (3) How to avoid collision? These stimuli were the starting point for a group experimental work, that is directly related to the previously described experimental apparatus since, in conversation with researcher, one would test how the zebrafish deviate when on a collision course or what the ratio of distance between them. The exercises, in the studio, had different forms, regarding the initial premises, where it was possible a group exploration, duet exploration (since in the laboratory they use these formations), the exploration of ‘ways to collide and avoid’ and constriction of space (such as the physical space of the zebrafish). It is interesting to note, at this point, that the body’s mode of action in this exploration associated to the use of ‘structured improvisation’. That is, through tasks proposed to the dancers, they would have to solve them without resorting to a pretested form. As a way of explaining the term ‘structured improvisation’, Erin Manning (2013) uses the analogous expression “enabling constraints”. The ‘constraints’, allows the existence of an open field of experimentation, explaining its importance in collective work.

Enabling constraints for mobile architectures include inventing techniques for collective alignments that evolve beyond pure habituation movement. These techniques can begin with an object but must find creative ways of transducing the object into the proposition for the collective individuation of a distributed relational movement. Once again, technique must become technicity.²⁸

28 Manning, 2009, 112.

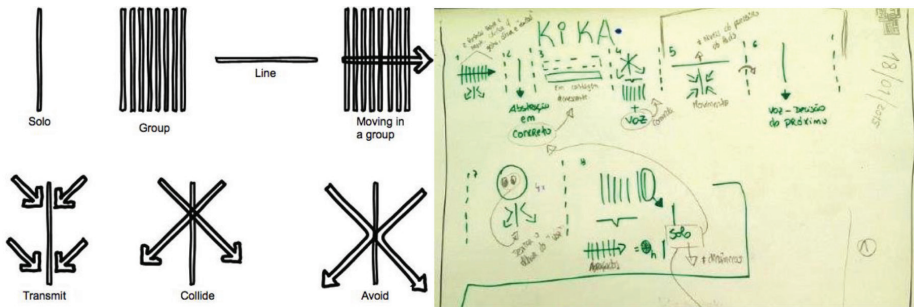


Figure 3 - Representation of the 'Systems'. At the left the explanation of the score. At the right a rehearsal score used in the creative process.

In this way, there is the possibility of using improvisation as a tool for the research, but that allies to a structure known by all in a sharing 'ground'. Maintaining the initial premises that resides in the group decision through choices within the framework of a structured improvisation. André Lepecki (2011), through Paul Carter, rescues the term 'politics from the ground', where 'the ground', "(...) is an acute attention to the physical particulars of all the elements of a situation, knowing that these particularities conform into a plane of composition between body and ground called history (...)".²⁹ Therefore, different choreographies alter the way that the feet adapt to their different 'grounds'. The 'ground' can be the common platform that is shared in the same studio and that extends until the laboratory. While there is a possibility of a "(...) co-constitutional correlation [that] is established between dances and their places, and between places and their dances",³⁰ there is an attempt to build this place through the mediation of information between the 'places' where dance arises. And the construction of a territory that is expected to be singular and shared, as a way of contributing to the "territorialization"(Guattari, 1992). One of the forms was the notation system that was created to be used as parts of a movement score that we call 'Systems' (structured improvisation scores in ENSAIO).

These systems of notation are not the formal, they were made by the interactions of the choreographer and the dancers. Concerning this, Jon-

29 Lepecki, 2011, 47.

30 Lepecki, 2011, 47.

athan Burrows, interviewed by Myriam Van Imschoot, states that movement scores are important as a way of clarifying the work process in the essay and that it offers the possibility of understanding the principles of the piece and is a facilitator of process of communication.

For me, one pleasure of a score is to come back to the body with information which the body must figure out, in the process of which you momentarily break habitual patterns. The only thing I am wary about in relation to scores is when they become too much an object, something fetishised as though they are special beyond the piece itself.³¹

Going back to ENSAIO, in the 'Systems' created there are symbols of schematic representation of tools such as **colliding** and **avoiding** (figure 3). From these came two more: **transmit** and **abstraction**. Consequently, transmission arises because of the collision process, that is, it introduces the possibility of exploiting the potential of the collision as a form of transmission of information, such as the modulation of the trajectory of a fish by the action of the group. Abstraction allows the emergence of a common vocabulary (understood by all - social information) where it is possible for the dancer to use a concrete communication mechanism, such as a gesture or a word, and translate it into the body form through composition tools such as for example repetition, amplification/reduction or incorporation making information once common, in a system that only himself understands. So, as in the laboratory, 'experimental protocols' were created and emerged from this common 'ground'. This form was assumed as a (large) first approach that corresponded to several trials where each dancer constructed a hypothesis, in this way, there was the creation of scores, in an intimate connection with the notion of game, fact referred to by the dancers themselves. Where it is imperative that each dancer knows the set of rules/premises to be tested throughout the creative process and the improvisation session. Dancers, and the choreographer were playing with boxes and arrows in an attempt to explore the group decision and the communication within the group. We were playing with ourselves in these shared roles, where dancers choreographed

31 Burrows & Brande, 2011.

themselves mapping the actions. Schechner (2002) points out that “Playing, like ritual, is at the heart of performance. In fact, performance may be defined as ritualised behaviour conditioned/permeated by play”.³² In other words, there is a relationship between performance and game, since Schechner (2002) defines it as a state, an activity or something spontaneous.

Adult playing is different from children’s in terms of the amount of time spent playing and the shift from “free” or “explanatory” to rule-bound playing. (...) Artists are not the only adults who are given leave to “play around”. Researchers in science and industry and even some business people are able to integrate play into their work. (Schechner, 2002, p. 92)

3.2 Individual Information

After building the basis of group work, it was possible to begin to turn attention to individuality (individual information), in counterpoint to the group work through the ‘Systems’. Individuality is, according to Fazenda (2012), associated with a ‘language’ or ‘style’, to “(...) refer to the distinctive dimension of a system of movements (...) qualities of movement or the central qualities of a style of movement [with] the set of characteristics that constitute the ‘basis of a style of movement’”.³³ In this way, maintaining their individuality, was asked to the dancers to answer a series of questions about themselves making a personal and non-accessible text. Where the dancers could write without any constraint, with this text they could create a dance solo based on that. This solo turned again into a text that was accessible to everyone, where they wrote about what the body was doing. The polarisation of information is, in this process, an important tool because it establishes a relationship between individual information and social or group information.

Since its genesis, translation has been a term used in different aspects. To translate involves making a passage from one language to another.

32 Schechner, 2002, 89.

33 Fazenda, 2012, 80.

The passage from one medium to another was a thought and an action that founded the creative process of ENSAIO. Since, as already mentioned, there was the passage of CCU lab material into dance studio. In this respect, the question arose: ‘How to make this translation?’. Returning to the written medium, the language, for Damásio (2000), the language, per se, “(...) is a conversion of nonlinguistic images that represent entities, events, relations and inferences”.³⁴ In this view, what is symbolized by words begins by existing in a non-verbal way, then there must be a non-verbal self and nonverbal knowledge. This problematic of what precedes language was also discussed by Susan Langer. In this way, Alexander Durig (1994), states that, according to Langer, the human being takes for granted the meaning of what he perceives, and of the logical connection with perception in the various modes of experience. Langer proposes two ways of experiencing meaningful perception: (1) discursive modes that use language, that is, written and spoken words; (2) non-discursive modes that are based on experience and on sensory and emotional assimilation. This experience is present in music, dance, fashion and painting. Where “Langer claims that all these forms of nondiscursive meaning in fact pre-date and necessarily precede discursive language”.³⁵ It is important to focus attention on the words of Damásio, and the possibility of Langer, that the translation is inherent to human beings and there are non-discursive forms of perception and translation of information. The process of translation is, in a broader sense, associated with language, a tool of representation and perception. Focusing now on the body, it presents several expressive possibilities and is constantly in a process of translation. Although its language (body language) is not recognized by José Gil (2010) as a metalanguage. According to Gil (2010), it is not possible, in an artistic manifestation, to

(...) isolate a discrete unit, an autonomous unit as a phoneme and articulate phoneme with phoneme, to create another type of unit, for example a morpheme. This is how verbal language is created. Now when one speaks of body

34 Damásio, 2000,133.

35 Durig, 1994, 255.

language or artistic language (...) there is no possibility of isolating a discrete unity in the continuum (...) of the gestures when it comes to a dance.³⁶

Lévi-Strauss, quoted by Monteiro (2011), states that art ran two risks associated with language: “(...) not to become language or to be too much language”.³⁷ In the impossibility of defining a clear language, its translation imposes another kind of awareness on the process of transformation itself. In practical terms the translation, proposed by the choreographic modes in ENSAIO, had three major forms: **(1) translation of comprehensive scientific research** topics into a network supporting the entire process and the final product; **(2) translation of specific laboratory material** into body exercises; **(3) translation as choreographic creation mechanism** and translation as performative material.

The point that refers to the translation of topics, **(1) translation of comprehensive scientific research**, took place in the artistic residence at the laboratory that preceded the body work. That is, it was necessary, for the creation of a performative object shaped by lab information, to establish a network of concepts that were common, so that, with its manipulation, the essence of the work would not be lost. These concepts relate to group decision making, personal information and social information. The translation of the basic concepts came directly from the laboratory since it is also a transversal issue to several research groups in the CCU. In this way, the process was built around three great valences: the use of improvisation, the creation of material in group and the creation of individual material. Where improvisation is present in the understanding of the ‘Systems’. The group work was expressed, for example, in the construction of common material through the process of devising in the creation of movement. Where the choreography was made in a democratic and collaborative work. Finally, the construction of individual material was held with the individual tasks.

These were two examples of transversal mechanisms in the passage from the laboratory to the studio, but which, because of their specificities,

36 Gil, 2010, 11.

37 Monteiro, 2011, 426.

translated into a different medium. In the second point, **(2) the translation of specific material** can cover different levels. The appropriation of small parts implies a simplification of the whole. That is, it is necessary to understand the basis of the investigation or the concrete experience to be intelligible in the studio by the body tasks. For example, in the laboratory apparatus it was study how to the fishes avoid collision, in the studio, it is possible to simulate this choreographic device. However, in the studio, this is just a starting point. There is continually a (re)appropriation of this idea of collision that can have different results: to collide physically, to collide with words, to collide with the voice, to collide with gaze, to deviate, to be very close and not to touch, among other myriads of forms. The 'fractality' of the small parts, gains new meanings in studio, enlarging and moving away from the concrete lab data. Since in the scientific process there is a simplification of the experimental processes and not in the approach realized by the body. However, the premise in this case, the collision, is recognized both in the studio and in the laboratory. So, in an artistic language the units, even if they cannot be cut out and discreet, can be considered as parts, say parts of a painting, parts of a work. Each unit or sequence, which in a sense subsists represents the world, implies a world. Not only do other units overlap, but there is a world, a world that is in condensed form, concentrated in a part, put, without we can define what is a part.³⁸ In contrast to this form of translation, there is one that is considered more direct. This relates to the transposition of images, forms, and even sounds from the laboratory. An example of this, is the use of a recorded sound from the laboratory apparatus a sound of the 'on and off' through a magnet in the control of zebrafish water temperature as a stimulus for choreographic modulation.

During the process of creation, there was a concern in the articulation of the body with writing in the form of symbols or text and use **(3) translation as choreographic creation mechanism**. The textual aspect, referred above, served the purpose of perpetuating, through translation, a form in another form, that is, a text in motion, and then the movement again in another text. Where "Working with words reminds us that concrete and abstract means of communication are sometimes closer than

38 Gil, 2010.

we think, and that we need not be trapped by either”.³⁹ After writing the text, they created a solo following the score as an ideational stimulus. With the dance solo, they build another text only with the description of what they, physically, did. These instances shared information that has remained private, behind the movement. The possibility of text-solo-text approximates the scheme proposed by Gil (1997) when referring to Kafka’s pen-making machine in *The Penitentiary Colony* (1919). Where “The machine thus performs the exact translator function of these successive transfers”.⁴⁰ Where the circular image is created in the diagram “Sense of the graph [relation between object and a given set] → written on the skin → revealed sense → written (paper) → Sense of the graph [again] (...)”.⁴¹ This systematic mechanism is also present in the performance since these materials are articulated, the voice and the body, where words can take place, reshape or order movements to the body and, on the contrary, the body can force words to change, to gain a different meaning. This game of ‘hide and seek’, amplifies when the dancers reveal the score to the audience.

The score then represents, in a way, the piece itself, separate from the personality or desires of the performer. This can allow the performer to disappear at times, giving the audience space for more direct and Personal relation to the dance, music or text they’re seeing or hearing.⁴²

39 Burrows, 2010, 151.

40 Gil, 1997, 116.

41 Gil, 1997, 116.

42 Burrows, 2010, 143.

6. After the Lab, After the Stage



Figure 4 – ENSAIO © Nuno Lima, Leiria, Portugal 2016

What comes after the empty stage? What invisible matter stays when the curtain falls? These are some thoughts in motion that, at this point, this written word helps me to retain. ENSAIO, besides the process that were explained before, is a case study, a possibility, a path that crossed dance and neuroscience. Along the text, I tried to design a pathway that not only unravels the creative process and what actually the dancers made, but also to give a broader sense of interaction between art and science. So, the body is a vehicle for this interaction because

(...) the body is a dynamic constellation in co-composition with the environment, if it is an ecology of practices, and if thought is an active contributor to the feltness of ex-

perience, it seems to me that the starting point in challenging the body-world split is putting thought in the world.⁴³

Here the body, the body in ENSAIO, is a field of experiences, is an open space for experimentation, as Bergson states “(...) our body is the matter upon which our consciousness applies itself, it is coextensive with our consciousness. It includes everything that we perceive, it extends unto the stars”.⁴⁴ This body echoes in Merleau Ponty’s central original idea about perception, that it is not just contingently but essentially a bodily phenomenon.⁴⁵

Thus the relation between the things and my body is decidedly singular: it is what makes me sometimes remain in appearances, and it is also what sometimes brings me to the things themselves; it is what produces the buzzing of appearances, it is also what silences them and casts me fully into the world.⁴⁶

The use of the body as a transducer reveals its amplifying potential and presents itself as an alternative form of investigation where “The code changer is the body [and is] (...) in the body that operate the paths, it is the body who receives the power of a thing, of a place (...)”.⁴⁷ The body, as proposed by Gil (1997), is an active agent in translation from one medium to another. A body that has the capacity to fill and empty, which is a conductor capable of being crossed, a “(...) human body because it can become (...) pure movement. In short, a ‘paradoxical body’”(Gil, 2001, p. 69). The body in ENSAIO is continuously in research, under test; an essay that melt the stage with the laboratory. This body aims “(...) to wrest the perception from perceptions, to remove affection from affections, as a passage from one state to another (...)”(Deleuze & Guattari, 1992, p. 217). This passage, or translation, is the movement and by movement, becomes a bodily substance. This body makes decisions, is individualized and, at the same time, in diluted in a group. But is always trying to find

43 Manning, 2016, 115.

44 Bergson, 1935, 246.

45 Carman, 2008.

46 Ponty, 1968, 8.

47 Gil, 1997, 27.

ways to expresses itself through movement or by the words. Where voice is a fundamental tool, because it can modulate the movement, or it can be silenced to reach a different kind of communication. The translation of the text into the body and into the voice gives it even more layers of perception and, at the same time, of dilution. Where

(...) the movement user also uses words. I am the author of my movements because in a certain sense I do not just do them, as I also say them (...) [these words] (...) construct another physical world, concrete, and with particularity of being instantaneous (...) (Tavares, 2013, p. 170).

The instantaneousness in ENSAIO is not only related to the inherent volatile nature of the performance, but also because of the improvisational substrate. Every time there is a new ENSAIO, a new attempt, new decisions are made, and new relationships happen within the same network. Where "(...) dance translates the mass of embodied and inarticulate ('embedded') into intensive pathways. (...) It transforms the words and gestures articulated by language in a 'motion' sense by movement".⁴⁸ So, this motion, this sense is always (re)articulated in each presentation because improvisation emerges as an invention spontaneously "in an impromptu or unforeseen way".⁴⁹ Although there is a strong component of improvised movement, there is a structuring of it, where the freedom and spontaneity are limited by the structure of the systems. Where "Improvisation could be seen as directly opposite in this sense. Here, in some cases, pleasure for the audience lay primarily in following the process of a performer's spontaneous response to the situation".⁵⁰ In this way, ENSAIO had some improvisation tools that guided the research in both, studio and stage. This sense of finding new results, new combinations, are related with the continuous searching for new meanings. So, even if there are some space for the unknow by the 'live task fulfilment' on the stage, these choreographic tools were rehearsed so there's some degree of freedom but in a precise set. When we make the path of this tools, it's interesting to think that they

48 Gil, 2001, 96.

49 Smith-Autard, 2010, 89.

50 Smith-Autard, 2010, 89-90.

came from a little aquarium in a dark laboratory. ENSAIO is a metaphor for breaking walls and distances, because the body can operate this process, and can contain this paradoxical income, it can be filled or emptied of meaning, perceptions and affections. In this process of occupation and desertation, it's possible to bodily think in some aspects of artistic creation, translation and, eventually, to think between the spaces of art and science. 'Research' is an important word that lies in the betweenness, and it is present in both processes of investigation. Comparing artistic and scientific domains it is essential to avoid the tendency to reduce one in the other and on the assumption that one is truer. What I propose is that they can be juxtaposed "(...) to look at the similarities and differences between the approaches and how they can inform one another. Where science focuses on what is objectively measured, art emphasizes the unique and immeasurable aesthetic qualities of a particular work".⁵¹ In this way, it is possible to establish a transversal path to evoke the possibility of contamination and complementarity. But sometimes there's a reminiscing of the two separated cultures, what is intended is to think in the gap, but as a living thing. A gap that can be bigger or smaller and, other times almost doesn't exist. The mirrored relation is expressed by Mcniff (2008) when he states that art is, as science, characterized by consistent formal patterns and structural elements that can be generalized beyond the experiences of individuals. It exemplifies that the new physics reveals phenomena much more variable and subject to contextual influences as in art. That is, both art and science are empirical and immersed in the physical manipulation of material substances that are carefully observed in a continuous process of research. The guiding principle is that the scientific assumption because there is a constant control over certain variables in the research process. Although they share this point, when art is used as a form of research, there are endless variations of style, interpretation and outputs where the results welcome des-literalization emerging from systemic practice. In turn, in many areas of science, there is an effort to produce a constant replication of the experimental results. Thus, science tends to reduce experience to its fundamental principles as art amplifies

51 Mcniff, 2008, 35.

and expands them. In sum, although scientific and art-based research are disparate, for McNiff (2008).

Since artistic expression is essentially heuristic, introspective, and deeply personal, there needs to be a complementary focus on art-based research on how to work with others and how it connects to practices in the discipline. This standard of “usefulness” again corresponds to the values of science, and it protects against self-indulgence that can threaten art-based inquiries.⁵²

So, what stays of this material substance? How it can echo through the time? What comes after a dance or, more precisely, what stays? After an experiment or after a research process, in science, there is a need to write, to fixate this knowledge and to communicate it. This is a really simplistic way to point this subject, as we can see in what Thomas Kuhn states, because the scientific knowledge is not a simple rationally response to reality but has much more social variables (Richards & Daston, 2016). But, at this point, I don't what to recall this discussion, but it could be a subject for future developments around the figure of the researcher in both fields of art and science and how they have to deal with ‘truthiness’ and how the personal venue influence the research process. Going back to the notion of knowledge, is interesting to transpose this process of fixation to dance because it is impossible due to the ephemeral state of the movement. So, the written and practical knowledge, opens a new field for research, where knowledge is not only accepted in its written form but in a multilayer form,

(...) conceptualized as the ability to provide warranted. Warranted refers to the provision of evidence concerning the truth or falsity of assertion, and the term assertion itself belongs to a universe of discourse in which language is its representational vehicle.⁵³

52 McNiff, 2008, 34.

53 Knowles & Cole, 2008, 5.

Knowledge can arise in different forms denying the paradox of an ‘ineffable knowledge’. In this way, art emerges as the possibility of departing from the ‘literalized’ form of knowledge. The ‘deslateralization’ of knowledge opens the possibility for other forms, in this way, a variety of forms of representation have been created within the context of artistic culture. “It includes forms of representation that combine the foregoing modalities as well. These forms of representation give us the access to expressive possibilities that would not be possible without their presence”.⁵⁴ As an art form, dance can convey a great complexity of information through a multi-sensory presentation. The dancing body becomes the three-dimensional medium capable of translating the results of the investigation. Performances generate knowledge by translating research and thoughts by bringing the audience closer to their own thoughts and feelings, opening a deeper and more perceptive form. The fuse movement on the stage, multiple interpretations and it is this ambiguity that

(...) connect with the complexity and nuances of embodied research findings. From within a social constructivist standpoint, the dancers’ embodied representation of the research findings is a valid method for evoking audience co-construction of personal meaning and utilisation of research-based knowledge.⁵⁵

This aspect of co-construction is one of the clusters of the artistic process, because it’s not also linked with the moment where the audience sees the performance, but also in the ‘bones’ of the choreographic process itself. Regarding to the choreographic work process, Larry Lavender (2006) states that there are four operations in the act of creation carried out by the choreographer: Improvisation, Development, Evaluation and Assimilation (IDEA). This is not to say that there are only four actions or only four behaviours in the process, “Still, everything they boil down to one or another of the four operations”.⁵⁶ In the experimental approach

54 Knowles & Cole, 2008, 5.

55 Rieger & Schultz, 2014, 136.

56 Lavender, 2006, 8.

of trial and error and repetition of the IDEA cycle, this was a constant mechanism during the creative process. To make this cycle, it implies the dynamic relationship between choreographer and dancer, where this relationship can have a myriad of forms. Jo Butterworth (2009), thinking about this relation, proposed the “Didactic-Democratic framework model”, this model presents a systematic approach to dance creation and makes explicit the devising process in a continuum of five generic approaches in a choreographic process.

Essentially ‘dance devising’ involves the dialectic between the acts of making and doing, of creating and performing, and of being an artist and/or interpreter. By implication, the roles and the responsibilities are shared. Perhaps by collaborative methods, or thought collective decision-making processes, the creation of dance as art is attempted by more than one artist.(Butterworth, 2009, p. 189)

In this way, the choreographer assumes different roles that vary according to his relationship with the dancers. This relationship is framed in a spectrum between the didactic (teaching by imitation) and democratic (collaborative approach),

Within the didactic-democratic model, a dance artist-practitioner is defined as an experienced, multi-skilled individual: a dancer who may also choreograph and teach, a teacher who may also choreograph and dance or a choreographer who may also dance and teach.⁵⁷

The author also argues that this model helps: (1) identify personal preferences; (2) recognise the specific needs of participants in the application of choreographic skills; (3) modify the testing process for a deeper understanding of the influence of contextual factors on the choreographic process. These processes do not follow a progressive linearity only proposes a reflection of the role of the agents in the choreographic process with respect to interactions, leadership methodologies and choreographic approaches. In the frame of ENSAIO, it was followed mainly three processes proposed by Butterworth (2009): process 3 - the dancer collaborate for the concept of the choreographer; process 4 - the dancer collaborate with the choreographer; process 5 - joint work of dancer-choreographer.

57 Butterworth, 2009, 178.

This process of role-sharing and accountability for methods of collaboration or joint decision-making should be based on premises where “(...) artists might develop trust and respect, begin with common understanding and clarify intentions, roles and agendas”.⁵⁸ In this way, the author, quoting Schirle (2005), references “In the crucible of devising, each group must strike its own balance between the productive engagement of artistic egos and the generosity of the collaborative spirit”.⁵⁹ During the devising process, there is always the risk of overlapping the compromise between artistic ideas, aesthetics and personal vision. However, there are many benefits of this sharing, to “(...) ensemble of dancer creators engaged in creating original work, the compounding ideas and energy provide personal knowledge of intent and context for all members”.⁶⁰ Collaboration is the backbone of ENSAIO because, not only inside the studio dancers were capable of actually decide and build some performance agency, but also is a result of a collaboration between the researchers at the lab and the dancers. So, in the process of crossing different ‘cultures’, it is vital to think this aspect of shared authorship and devising as a way to fulfill its purpose. After the lab, after the studio, collaboration stayed as a common ground, and as a linking principle.

Although “(...) philosophy thinks with concepts, science thinks with functions, and art thinks with sensations. (...)”.⁶¹ These domains can intersect and can produce new approaches and establish new relationships. For Manning (2009), quoting Marey, “Science has two obstacles that block its advance, first the defective capacity of our senses for discovering truths, and then the insufficiency of language for expressing and transmitting those we have acquired”.⁶² Blurring these two visions, ENSAIO tried to remove the obstacles proposed by Manning and looked for a functional though expressed by the body. The translation process proved to be a fundamental mechanism of passage, between lab and studio. This mechanism shaped the choreographic methods and processes even through

58 Butterworth, 2009, 189.

59 Butterworth, 2009,189.

60 Butterworth, 2009, 189

61 Zagala, 2002, 21.

62 Manning, 2009, 84.

the intuitive reading of the laboratory material or, in counterpoint, the modelling of choreographic thinking with defined rules from the scientific investigation. Here, was explored few examples of translation proposals, these are examples of mechanisms to serve the purpose of finding ways to cross lab and studio. As Walter Benjamin states in the beginning of “The task of the translator”.

In the appreciation of a work of art or an art form, consideration of the receiver never proves fruitful. Not only is any reference to a particular public or its representatives misleading, but even the concept of an “ideal” receiver is detrimental in the theoretical consideration of art, since all it posits is the existence and nature of man as such. Art, in the same way, posits man’s physical and spiritual existence, but in none of its works is it concerned with his attentiveness. No poem is intended for the reader, no picture for the beholder, no symphony for the audience.⁶³

The translation in ENSAIO was a mechanism of opening, was a way to amplify the perception of the body. It transformed the scientific data into movement, into choreographic thinking and tools. ENSAIO consists of a performative approach based on material translated from experience with researchers, observation of experiences and echoes of this relationship. Translation built the relationship between lab and studio, defining a common ‘ground’. This territory must be constructed with care and with a constant articulation between the limits in which it is inscribed. It is necessary to reduce the concepts and the stimuli to a common denominator. From the CCU to the studio, it is necessary to create a common lexicon, a conceptual substrate capable, on the one hand, of being faithful to its origin and, on the other hand, demarcating itself from it and expand through the body. In addition to the research questions, the non-verbal communication process itself has a myriad of opportunities for extrapolation and displacement. The synergy of practice and theory is a metaphor capable of exposing the hidden potential in the two entities. This choreographic performance, based on a body-based-research approach, assumes as a product extracted from the initial premises and that became independent. The common substrate did not prevent the performative result from being

63 Benjamin, 2002, 253.

removed from it and to gained other forms of existence and perception. In an opened rehearsal at CCU, researchers said that science seeks rules after experience, by the compilation of data derived from it, the rules arise and are fixed. In the case of art, it is by the rules that rises to the experience that the protocol is drawn.

The experience of working with scientists and dancers has revealed the aggregative nature of the performance and the possibility of it encompassing a set of variables. The paradoxical aspects that were valuable to be 'stolen' from the laboratory, promoted the communication between the instances since it will carry out the process of extraction of premises and its translation in the performative work. The content of these premises exists within a spectrum from the metaphorical to the more concrete. Therefore, for the extraction of relevant information, there must exist an intermediary that must have a, relatively deep, knowledge of the terrain through the experience in it so that it can catalyse the information from one medium to another in an effective and trustworthy way. The whole process is facilitated by the thought of sharing and artistic sensitivity of the intervening agents, be they artist or not. Therefore, ENSAIO assumes itself as an artistic object that encloses a set of concepts in movement that, inevitably, moved from a common territory and projected into a new. Its description, in the present text, focused mainly on the analysis of the process to understand, through practical experimentation, the possibilities of transversality and translation between science and dance.

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