DANCECODE
The Computer as Choreographer

Brisa MP

DANCECODE is a long-range research and creation project that generates relationships between computer code and choreography. *DANCECODE: The Computer as a Choreographer* is the first phase of the *DANCECODE* project (2016-2017). In these pages I want to share my practical and reflective experience around the interrelationships of choreography and code, machines and humans, for artistic production.

This project began in 2014 from the experience gained in the *PROTOBODY* project during its first phase, which reflected on creative art-technology procedures and the inter-relationship of bodies to the different stages of learning, creation, manufacturing and materiality processes.

The project, in turn, revisits "electrochoreographic" procedures, taking *DANCECODE* as a method of analysis.[1] *DANCECODE* is based on the practical study of programming platforms such as *Processing* and *Arduino*, framed in the "Java" language, as well as a long process of approaching other programming platforms, components and physical devices. This has led to reflective cross-overs between practices, procedures and strategies used at various stages of work.[2]

1 Electrochoreography is choreographic and electronic work in which both are highly contaminated. An electrochoreography should be able to link the choreographic movement-space-time with other electronic means; an electronic movement that links the living human and digital/analog body. It is a category created in Chile in 2006, during the scenic piece "Electrochoreographic Exercises," a prototype that included installation, dance, performance, and electronic media. It was designed with different conceptual challenges, and has been instrumental in relating the process of choreographic creation to programming. "Electrochoreographic Exercises" clearly shows an algorithmic structure, and at moments generative creation. Its ordering of letters, numbers and formulas, the instructions issued to the public, the motion, sound and video files as ("Int")variables, and the random order based in public ("float") all show a structure of work as an algorithmic type. (It won an award at the 2006 Monaco Dance Forum.)

2 My practical processes have been carried out from the experience as a performer or dance student to the creation of choreographic works since 2000 (projects such as *Eukinétik-tech*, *Forgive me music*, *Man on a Bed*, *PB/p.a*, etc.). The programming course taught by Lawrence Bender (UNTREF

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The practice, the "doing" with the technological, physical or digital matter, creates spaces of reform to thought – the body, what seemed immutable, is in full transformation, and then contemporary technologies will not be included as a "a means to the service of" art or dance, but a work will be the exercise perceptible to others within a process of unstable networks of communion between materials.

DANCECODE puts in relation the basics of two languages, programming and choreography, for the construction of scenes, improvisation and body modules analysis, where the axes of body, movement, time and space are installed. Choreography is understood as an act of moving into a space-time. In *DANCECODE*, the computer code will be created by a human, for a non-human setup, as part of a network of "actants" where different components intervene, whether they are organic or digital. "An actant," Bruno Latour suggests, "is a list of answers to the test, a list that once stabilized, is hooked to the name of one thing and a substance. This substance acts as a subject for all predicates; in other words, it becomes the source of actions" (Latour 1998: 131).

When I think of the "actant" concept, I think of computing, of circuits, of all industrial and digital materials. I think of matter as something that I can touch and feel. The digital matter is energy. The "list of answers to the test" are the erratic process inside of research and creative production where there are many possibilities of programming but I must choose one path to the final outcome. This choice will prepare the way for the development of the project. From this point of view, Latour's "actant" is an actor, organic and non-organic, inside the creative process, amongst the machines and the computers, me and others ... everything is of importance in this creative trajectory of the project.

The communication of a thinking body while running an action in the here and now of the creative process, towards the materialities – textures, functions, capacities and logical or erratic mechanisms of the practice itself – cannot be other than the linking of all the actants, human and non-human, into a net, into unstable hierarchies, or in some cases, definitely into the non-hierarchical. The physical matter affects the digital, and the digital matter affects the physical when they meet each other. If we think about how computer code enters a possible process of choreographic creation, we could say human creative processes convene other non-human processes. Body and code promote a flow of physical and digital data as part of a dynamic or moving system.

Movement has been a backbone in my work, and I understand it as a possible interface of formal problematizing and communication of the body, temporary space gesticulation, enabling knowledge in interaction with other bodies, machines, particles, pixels, physical and digital spaces. The movement is a flow of

2011-2012) enabled my exploration in graphical programming exercises, providing understanding of working with such diverse materials and any kind discursive components.

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data that can be implemented in various ways in space-time and in flows within an open network to create new temporary and unstable flows of data. The information from a physical choreographer, as well as from a computer, can be interpreted by the performer/actant in different ways. The computer code can be written in various ways to arrive at the same solution. We can give the power of choice to the computer. The computer can choose to read the data of code line to line, or for example, or it can select randomly the time or duration of a scene.

We can promote the randomness and error as possible configurations of association, no longer controlled entirely by us, "human actants." We can generate structures or systems with instructions in the same way as the choreography opens out to co-creation, now with machines. Although what happens in this process then will not be entirely uncontrolled, but it will be unpredictable.[3]

> Agents are continually appearing, moving, fading, swapping places with others, producing a relationship, entering a new set of relationships, leaving an old one, and so on. Due to this situation, it is vitally important to the semiotic analysis that the status of these is easily susceptible to change, passing from a real entity to social construct or vice versa. Therefore, the agency attributable or, on occasion, described in terms of the movements of one of these actors or actants, is absolutely contextual, precarious and outside the rigid categories imposed by traditional thinking. What we call subject or object is only the localized product, punctual and emerging from a given set of relationships. (Tirado and Domènech 2005: 11; my translation)

This network of "actants" will generate relationships within a determinate structure. But the interaction of all or some of these components-actants (physical or digital) as partner network could create new relationships between the components, and they will create other readings and aesthetics that we do not know yet.

3 (Random): this command is often used in the creative process between choreographer and interpreters of dance. The "unpredictable" factor is expressed, for example, in exercises where the choreographer delivers a set of instructions, whether spatial, temporal, conceptual or other, that can generate movement improvisations. The performer will perform with the body the "variables" proposed by the choreographer, and thus is an interpreter and also creator, since they will provide a new form or movement to that instruction. These instructions interpreted by the performer will be re-organized by the choreographer in space and time. In this same way, one can arrange a code based on instructions and variables that can be organized by the computer in an "unpredictable" way as a choreography. In my research, I studied frame sequences from the work of French scientist Étienne-Jules Marey (1830-1904) to think about movement-form-sign and informatic code. I also drew inspiration from Merce Cunningham, who in 1989 was among the early adapters of computer software (LifeForms) that could generate movement ideas and visualize them in 3D.

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We can approach "Generative Code Art"[4] with this idea of dance and code in mind. In the case of my project *DANCECODE*, I create a new category: "Generativedance". Based on these dialogues between choreography and code, the Generativedance concept gives me the opportunity to rethink the category of "author".

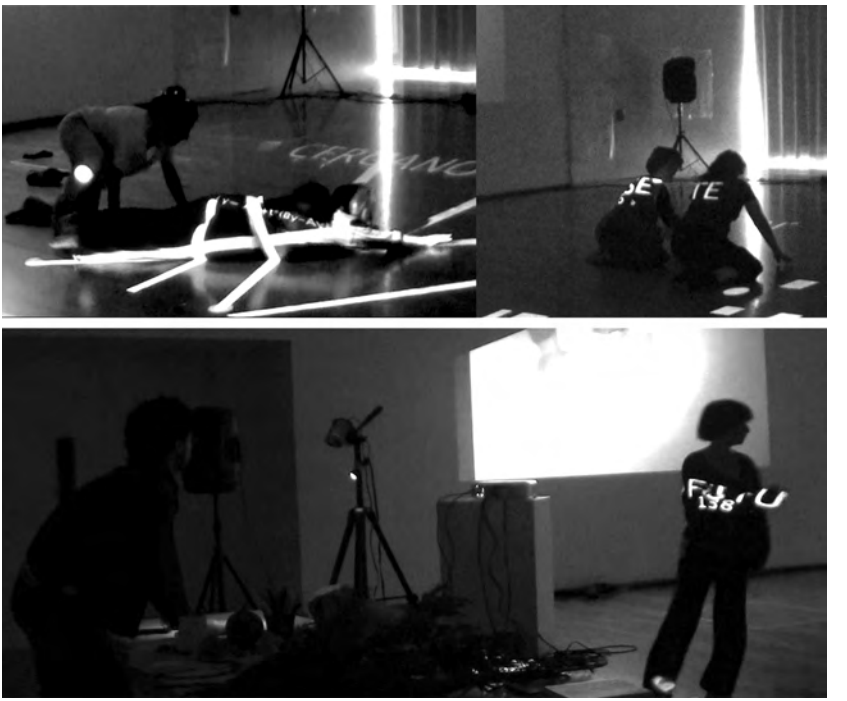

Fig. 1: Artistic and collaborative Residence. CoLABoratorio. DNA, International Dance Festival of Navarre at Huarte Centre. Pamplona, Spain in June 2017. Photos: CoLaboratorio 2017.

For example, I give instructions to the dancer and the software but lose power or direction over the scene, because the dancer and the machine are creating their own new relationship.

4 "Generative art refers to art that in whole or in part has been created with the use of an autonomous system. An autonomous system in this context is generally one that is non-human and can independently determine features of an artwork that would otherwise require decisions made directly by the artist. In some cases the human creator may claim that the generative system represents their own artistic idea, and in others that the system takes on the role of the creator." Cf. https://en.wikipedia.org/wiki/Generative_art.

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In 2019 the *DANCECODE* project begins a new phase entitled *DANCECODE: Open Source Electrochoreography*. This project proposes open work strategies and new structures of code. The project takes on strategies of the digital communities of free, open source software and hardware sharing where the non-hierarchical processes of creation are very important.

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