

# **A *TEXTOGRAPHY* OF THE COMPLEX PROCESS OF LEARNING AND TEACHING ONLINE**

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**ABSTRACT:** In this paper, I present an attempt similar to what Swales (1998) did when he wrote a *textography* of a university building. A *textographer* looks for pieces of paper in which he finds ways of life. The difference is this is meant to be a *textography* of my own complex path as an online learner and teacher. By complex, I do not mean complicated, rather I analyze the data through a Complexity Theory lens, embracing interconnectedness and dynamism. Complex systems and Applied Linguistics have been gradually seen together in publications since a seminal article by Larsen-Freeman (1997). References in other areas of knowledge also serve as my theoretical background. The features of complex systems (non-linearity, unpredictability, sensitiveness to initial conditions, openness, feedback sensitiveness, adaptability) are exemplified with textual samples. Metaphorically, I am the *textographer* searching through my lifelong online learning and teaching portfolio for clues which may reveal the intricacies of this path.

**KEYWORDS:** online teaching and learning; textual analysis; complexity.

**RESUMO:** Neste trabalho, apresento uma tentativa similar à de Swales (1998) quando o autor escreveu uma *textografia* de um prédio universitário. Um *textógrafo* procura pedaços de papel no qual ele encontra modos de vida. A diferença é que esta é uma *textografia* do meu percurso complexo como aluna e professora on-line. Por complexo, não quero dizer complicado, mas pretendo analisar os dados por meio da lente da Teoria da Complexidade, abrangendo interconexão e dinamicidade. Sistemas complexos e Linguística Aplicada têm gradualmente

sido vistos juntos em publicações desde o artigo seminal de Larsen-Freeman (1997). Referências de outras áreas do conhecimento também servem como minha fundamentação teórica. As características dos sistemas complexos (não-linearidade, imprevisibilidade, sensibilidade às condições iniciais, abertura, sensibilidade à *feedback*, adaptabilidade) são exemplificados com amostras textuais. Metaforicamente, eu sou uma *textógrafa* procurando em meu portfólio de aprendizagem e ensino on-line por pistas que podem revelar detalhes desse percurso.

**PALAVRAS-CHAVE:** ensino e aprendizagem on-line; análise textual; complexidade.

## 1. Introduction

As wisely expressed by Martin Luther King Jr., “The ultimate measure of a man is not where he stands in moments of comfort, but where he stands at times of challenge and controversy<sup>1</sup>”. Following the footsteps of this well-known civil rights leader, I believe that in moments of change, such as the one we are living in the new era of technological advances, it is wise to reflect upon what is happening, so we can learn from it. Having this in mind, what you will read in the paragraphs that follow may be considered a new textual genre, an attempt similar to what John Swales (1998) did when he wrote a *textography* of a university building; although it is meant to be a *textography* of my own life since my intent has been to search through my lifelong learning and teaching portfolio for clues which may reveal my culture and way of life as a student and an educator.

Distance learning has become more and more common each day, not only as courses which are completely online, but also as part of university curricula with some

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<sup>1</sup> Available at: <http://www.quotationspage.com/quote/24973.html>.

of the subjects taught in the digital environment. There are various possible definitions for the term *distance learning* and also different terminology, such as *distance education*; however there is a basic consensus that this type of education process is related to the fact that teachers and students are not present at the same place and at the same time. According to Moore and Kearsley (2007), we are currently living mostly the fifth generation of distance learning, in which virtual Internet-based classes profit from a convergence of text, audio and video in a sole platform for interaction - usually named virtual learning environment - generally taught by professionals who are guided by constructivist and collaborative teaching approaches. My focus, thus, will be on the opportunities I have had to be a student or a teacher in fifth generation distance education.

I intend to conduct my analysis through a Complexity Paradigm lens, which means I will observe the Chaos/Complexity characteristics common in certain phenomena as proposed by Larsen-Freeman (1997) and later Larsen-Freeman and Cameron (2008). This paradigm has offered Applied Linguistics a new way to look at data, which embraces the interconnectedness and dynamism of language and education. By analyzing my path as an online student and teacher as a complex system, I intend to take into account not only my individual identity, but also the relationships that have emerged from my contact with other agents in the different groups I have participated and which I use to draw my experiences from.

This text is organized in four other sections, besides this introduction, in which I explain more deeply the Complexity Paradigm; review the ideas of John Swales (1990; 1998; 2004) pertinent to this investigation; present the data and the analysis; and offer some final comments.

## 2. Complexity paradigm

Davis and Sumara (2006: 127) defend that complexity thinking is “an umbrella notion that enables researchers to note profound similarities across a diversity of phenomena”. Viewing a phenomenon as what is manifested by itself in a particular condition, we can understand how pertinent this approach is to conduct research in Applied Linguistics, a field mostly interested in language and education, two complex phenomena. The seminal article entitled *Chaos/Complexity Science and Second Language Acquisition*, published by Larsen-Freeman (1997) in the *Applied Linguistics Journal* is believed to have started this new way of conducting investigations. In an interview to Craig Sower (1997), Diane Larsen-Freeman explains that it was during her reading of James Gleick’s book (1991) that she kept encountering themes that reminded her of issues in language acquisition that she had been wrestling with for some time, and thus, realized that the behavior of systems that are studied in chaos science would provide, at the very least, useful metaphors for applied linguists.

All in all, the Theory of Chaos has very much influenced the Complexity Paradigm, to an extent that Chris Langton, in an interview to Roger Lewin (1992: 10) commented that “chaos and complexity are chasing each other around in a circle trying to find out if they are the same or different”. Waldrop (1992: 12) points that “the edge of chaos is the constantly shifting battle zone between stagnation and anarchy, the one place where a complex system can be spontaneous, adaptive, and alive”. For Baranger (2000), ‘chaos’ is the rediscovery that calculus does not hold infinite power since the Theory of Chaos solves different scientific and engineering problems that are not understood through calculus. According to Gleick (1991), the study of chaos has come from a marginal area of physics, whose main movement during most of the XX century

was the physics of particles. Some physicists, unhappy with the slow advance of this prestigious science, were anxious for a switch for all the science of physics. The modern study of chaos, thus, started in the 60s, with the comprehension that very simple mathematical equations could serve as a model for more violent systems and that slight differences in initial conditions could transform into great differences of output.

With a stronger focus on the metaphors the paradigm may offer, and not on the similarities and differences of Chaos and Complexity, Larsen-Freeman and Cameron (2008) propose the interchangeable use of the terms by adding a slash between the two terms, Chaos/Complexity, and this has been followed by several linguists and applied linguists who also conduct research informed by this paradigm. Larsen-Freeman and Cameron (2008) point to the fact of how Linguistics has reduced the complexity of language by decontextualizing, segregating and atemporalizing it. Linguistics, thus, may tend to follow a reductionist tradition, by analyzing the mechanisms, the parts, separately, and taking for granted the dynamics of linguistic systems. Applied Linguistics sometimes follows these footsteps, casting a similar look at its objects of study, as for instance, language acquisition.

Larsen-Freeman (1997) believes Chaos/Complexity theory has the potential to contribute to our awareness about various aspects of language and language acquisition since it: 1) encourages a blurring of boundaries instead of dichotomies; 2) warns against settling for simple solutions prematurely; 3) provides some fresh images for second language acquisition phenomena; 4) foregrounds certain problems, obviates others; 5) discourages theory construction through the aggregation of simples unvarying cause-effect links; 6) underscores the importance of details; and 7) reminds us to hold the whole and to find a unit of analysis that allows this. I extend this potential to a better understanding of digital literacy and the processes of teaching and learning online.

The characteristics which I have selected from a wide range of possibilities afforded by the Complexity Paradigm are non-linearity, unpredictability, sensitiveness to initial conditions, openness, feedback sensitiveness and adaptability. For a clearer understanding, I have organized these features with general comments that explain them in the chart below, and I will offer further comments after it.

### **Characteristics of complex systems**

Non-linearity	The interactions among elements and agents in a complex system change in a way that is not proportional to input. There is a disproportionate relationship between cause and effect.
Unpredictability	Complex systems go through periods of order and randomness and when each will occur is unpredictable.
Sensitiveness to initial conditions	Slight changes in initial conditions can have strong implications on the output.
Openness	Open systems allow energy or matter to enter from outside the system.
Feedback sensitiveness	The order complex systems exhibit is shaped by the response to external feedback.
Adaptability	In adaptive systems, change in one area of the system leads to change in the system as a whole.

Complex systems change over time and there is not an exact way of determining when and how these changes will occur. “A nonlinear system is one in which the effect is disproportionate to the cause. [...] Nonlinear systems can also sometimes exhibit linearity, however, at other times they may react in a way that is all out of proportion to

the cause. A rolling pebble, for example, can trigger an avalanche” (LARSEN-FREEMAN, 1997: 143). The changes that happen in the system are influenced not only by the initial conditions, but also because the systems adapt whenever they get feedback.

The empirical study which has founded the idea that initial conditions could lead to exponentially different results, widely known as ‘butterfly effect’, was the one developed by meteorologist Edward Lorenz. While conducting an attempt of meteorological forecast, Lorenz (1963: 139) noticed the issue of sensitiveness to initial conditions in non-deterministic systems. “Two states differing by imperceptible amounts may eventually evolve into two considerably different states”.

In contrast to a closed system, whose final state is undeniably determined by the initial conditions, the open system maintains itself in a continuous flow of input and output. Being open to different energy and matter can enable a ‘far-from-equilibrium’ system to keep adapting and maintain stability. The changes which occur naturally and automatically in the systems can be defined by the process of self-organization. The elements reorganize themselves to better reach the goals of the system.

Lorenz (1993) warns that chaos in a complexity perspective cannot be equated with total randomness, which means, complete lack of format or systematization, because it includes phenomena that are slightly random – those that are dependent on initial conditions – but there is stability involving the variability. As an example of randomness, he mentions the flipping of a coin, heads or tails, because we can never predict on which side the coin will fall, we can only guess. The example provided for chaotic is a pinball machine, since every time we begin the game, we cannot repeat the same initial conditions, that is why the ball always goes through a different trajectory.

Nevertheless, the ball will never go through a path outside the machine, that is, there is stability though there is also variability.

All in all, the features which are common in complex systems are a very interesting set of categories I can start my analysis from. In the next section, I will mention where and how I am going to search for data that will represent the complex process of becoming an online learner and teacher, commenting on the premises of Swales' *textography* (1998).

### **3. Swales' textual analysis approach**

What I intend to analyze is my own textual production in the context of learning and teaching online, so I argue that following the perspectives of genre analysis by Swales (1990, 1998, 2004) together with some of the concepts of the Complexity Paradigm, mentioned in the previous section, will suffice as theoretical background. According to Swales (1990), the genre analysis approach is a valuable means of studying spoken and written discourse for applied ends since it offers a workable way of making sense of communicative events. It emerges from the assumption that communicative behavior is partly organized through a repertoire of genres.

The approach develops and makes use of three key concepts: discourse community, genre and language-learning task, all bound by a communicative purpose. Discourse communities are sociorhetorical networks that form in order to work towards sets of common goals. Genres are properties of discourse communities; classes of communicative events which typically possess features such as stability and name recognition. Tasks are the processing procedures, which means, the encoding and decoding procedures as moderated by genre-related aspects of text-role and text-

environment (SWALES, 1990). The following quote thoroughly explains the rationale proposed by the author.

A genre comprises a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognized by the expert members of the parent discourse community and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of the discourse and influences and constrains choice of content and style. Communicative purpose is both a privileged criterion and one that operates to keep the scope of a genre as here conceived narrowly focused on comparable rhetorical action. In addition to purpose, exemplars of a genre exhibit various patterns of similarity in terms of structure, style, content and intended audience. If all high probability expectations are realized, the exemplar will be viewed as prototypical by the parent discourse community. The genre names inherited and produced by discourse communities and imported by others constitute valuable ethnographic communication, but typically need further validation (SWALES, 1990: 58).

Swales (1990) highlights that genre study is more than textual analysis, but it is still necessary to use texts in order to understand how texts organize themselves in terms of information, rhetoric and style. Although textual analysis itself does not provide a rationale of why particular texts have acquired certain features, the text is the basic source for conducting the analysis. It is extremely important to have in mind that retaining social purpose as a valuable long-term outcome of analysis (SWALES, 2004) may be an asset to the researcher.

In this sociorhetorical perspective of genres, Swales (1998) proposes a new genre which he entitles *textography*, an analysis of text, of textual forms and of systems of texts, not “pure” ethnography, but of ethnographical orientation. He describes the three different units of the North University Building in Michigan: the Computer Resource Site, the Herbarium and the English Language Institute, respective on the first, second and third floors. He points to similarities and differences and focuses on the every day activities which are discourse-related and the rhythms of each floor. He then discusses the textual products of different members of the discourse communities of the second and third floors. As a *textographer*, Swales walks through the building looking for pieces of paper, but what he finds is many cultures and ways of life merging to bring about complex worlds.

Swales (1998) investigates how some of the workers of the North University Building are involved in building their textual lives, within the discursive space permitted by their communities. He explains that other researchers might have approached the building in a different way, but since he is a discourse analyst, he examines texts, including the biographies of the participants, focusing on particularities, putting rhetoric in a wider disciplinary context. One interesting outcome of his research is the possibility to transfer the application of a *textography* to other contexts, since a thorough account in a particular cultural milieu or a given community affords the comprehension of the intentions of the agents through what they do.

Since the *textography* I have conducted is related to technology, it is pertinent to go through some of Swales’ ideas regarding this issue. In his book *Research Genres: explorations and applications*, Swales (2004) discusses the impact of technology to the study of genres, especially with the transformations made possible by the Internet and the Web. He tells his own anecdote and the changes technology has brought to his life

as a writer, for instance, from a book written in the 1980s by hand on double-lined paper and later keyboarded by his secretary, to his most current work which was mostly produced himself in his personal computer. He argues that most people must also have stories about how electronic communications have transformed their lives. In the next section, thus, I analyze how it has changed my own life.

#### **4. A textography of an online student and teacher**

My experience in fifth generation distance education began in 2003 when I took a three-week workshop given by Professor M. Krauss from Lewis & Clark College. The workshop entitled *Integrating the Internet into the Classroom* aimed at exploring the Internet for content material to be integrated into class planning and the classroom itself so that the teaching process could be enhanced. Besides reflecting on how to use the web as teachers, we learned how to produce different online material, such as puzzles, quizzes and webquests.

Later, when I began my doctoral studies, I had the opportunity to study five different subjects online, all of them at the Federal University of Minas Gerais. The first was taught by my doctoral advisor in the first semester of 2006 and was entitled *Digital Genres*. In the following four semesters up to the first of 2008, I studied *Semiotics*, *Research Methodology*, *Narrative Studies* and *Language and Technology*, all completely online. The interface was either a virtual learning environment called Teleduc which is widely known in Brazil or the free software named *Texto Livre*. During the last subject, *Language and Technology*, I also managed a seminar on behalf of my group using a different platform I had previously had experience with, the virtual learning environment Eproinfo.

As for my teaching experience in the distance education model, it began when I was a tutor who aided students with basic technology issues for the Business Administration Course at the Federal University of Uberlândia. The interface was also a virtual learning environment called Eproinfo and developed by a sector of the Brazilian Ministry of Education. My duty was to keep in touch with all students helping them out in their tasks and giving feedback whenever necessary.

Then, I taught two online subjects for undergraduate Language Arts students at the Federal University of Minas Gerais both entitled *Digital Literacy*. The first was offered in the second semester of 2007 mostly to students who were preparing to be Portuguese teachers and the latter in the second semester of 2008 which had participants who would become teachers of Portuguese or different foreign languages, using the virtual learning environment Moodle. It is important to mention that I had other experience in online learning and teaching, but since they were just partly online courses, I have not considered them in my analysis.

First of all, it is interesting to notice that the cause is not proportionate to the effect, a feature named non-linearity in complex systems terminology. As a digital immigrant<sup>2</sup>, living in a city with a bandwidth limiter of dialup connection, and with a rather negative expectation in terms of how to acquire and use technology, I was more naturally expected not to carry on my technological pursuit. Opposed to digital natives (PRENSKY, 2001), who are naturally familiar with the digital environment, I found it very hard to use internet tools. Anyway, I did not give up.

I will use the excerpt below in order to further develop this argument.

[...]The biggest challenge for me is the technology itself (I hope I can cope with it). Three specific things I'd love to learn from this workshop:

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<sup>2</sup> Digital Immigrants are those who were already socialized when digital technology arrived on the scene, and it opposes to Digital Natives, the ones who have grown up in the digital age (PRENSKY, 2001).

how to involve students in internet activities even though 1) they may not have access to it at home, 2) I may not have a high tech computer lab, 3) I may not have enough computers for a whole class. [...]

Excerpt from message sent on July 13, 2003

I remember that for my first online course, we were expected to dedicate at least two hours daily to fulfill the requirements and I remember most people mentioned spending up to three or four hours a day. It took me eight hours to complete my assignments every day due to connection problems and low digital literacy. Four years later, there I was teaching a digital literacy class and trying to show my students the possibilities of using the computer and the Internet in education. In fact, the task I gave students in the fifteenth (last) week of the course was to write a lesson plan integrating the use of the web in a computer lab class, with a plan B if they had only one computer for the whole class and a plan C using the computer just for class preparation but not in the classroom. I guess I had learned the importance of technology, but also that there are different ways to use it depending on the possibilities and constraints.

Although a complex system portrays relative stability, it generally shifts through periods of order and chaos. In all the experiences I have had learning and teaching online, there were extremely turbulent moments that eventually had their order restored. This was often connected with the impossibility of the students to complete a task due to technical problems. When they faced an obstacle that they were unable to go past, the teacher's mailbox was automatically full of messages of despair. I will illustrate this with one e-mail exchange, the first was selected from a group of six other e-mails with similar content, which will illustrate the problem students were facing, and the second is

a message from the teacher to all the students, hoping her feedback would restore the order, and it did.

I can't complete the group puzzle! The site is only putting one of the words we have chosen! What do I do?

Message posted by student on October 19, 2007

Hi everybody! As you have noticed the layout of puzzlemaker has changed and now you cannot copy and paste as you did for the individual portfolio. We suggest you make a print screen and paste it in a word document so you can post it in the portfolio. As we did not expect this problem, we will wait until Monday night to check the group assignments. [...]

Excerpt of message posted on October 20, 2007

As you could read, the layout of the software that I had planned to use changed in the week of the assignment. Thus, some of the steps they should follow, which I had previously translated, were not appropriate. I had to reformulate the task and send them a message explaining it. I have learned from these moments that online students should not panic when they run into technical problems since it is usual that the teacher will be sympathetic and reorganize the schedule or even the task itself so that no one is put in a disadvantageous situation. Also, it is important that the online teacher be prepared, since it is predictable that this sort of problem will happen, but it is unpredictable when and how it will occur.

The initial conditions are very influential in a system and slight differences may alter the outcomes. When I taught my first *Digital Literacy* course, I had already experienced the virtual learning environment Teleduc as a student during two semesters, and was taking another course based on the platform at the time. Therefore, I believe dealing with this interface was easier because of extensive previous contact. Nevertheless, since we are dealing with a complex system, this fact does not determine that previous contact will result on a positive outcome. Let's take my second experience with Eproinfo for instance. Because I had been just a tutor and not an administrator of the system the first time I used it, the second time, when I had to conduct a seminar and therefore, manage the system, I ran into a lot of difficulty that can be illustrated by the e-mail messages below.

I have tried to find my login and password but I couldn't. Unfortunately the e-mail that was informed in the platform no longer exists. What can I do to access my account again?

Message sent on April 29, 2008

Gosh, the forum is really complicated, I cannot delete anything, and when I called the support office, they told me that the forum was just manageable on the blue screen, but I was able to open it on the yellow one??? It seems they do not have a lot of knowledge of the environment. I'll try to contact a technician from UFU I know, maybe he can help. Anyway, I guess it is possible to conduct the seminar the way it is. What do you think?

Message sent on May 12, 2008.

The first message was sent to a technician from the support office, and it was followed by many other messages up to the point in which I could access the system again. The second message was sent to the university professor who had asked me to conduct the seminar as an assignment. Some of the difficulties I had were due to the fact I had a different role in the environment and others because the system had been updated since the other time I had used it. The fact that I have used a website once does not guarantee I will do it easily again since there are constant updates on technological devices, especially the web.

The process I have been going through since 2003 is continuous and also open, especially because I usually need to ask for help in some technical situations and I am also in a nonstop learning process, especially when I run into issues I cannot sort out by myself. Among the many people who have helped me in this path, there is someone I will use to illustrate this type of interaction. The last three weeks of the Digital Literacy course were co-taught by one of my peers from graduate school. She was researching the use of web 2.0 in the classroom for her master's thesis, so it was an opportunity for her to collect data. Among the many times I asked for her help, the message exchange below shows one of these.

[...] I asked the folks at UFMG and they told me that our course will be online only for a semester. I was not able to make a backup of the Teleduc course but at least it won't go offline, but when it comes to Moodle I don't know what to do.

Excerpt from message sent by me on December 29, 2008

When you access Moodle as an Administrator, is there a backup link? If there is, you can make a backup of the course.

Excerpt from message sent by my peer on January 2, 2009

If I had not been open to suggestions from my colleagues and to the help others could give me, maybe I would have been stuck to the same technological practices. On the other hand, I took all the opportunities I had to learn different ways of using the computer and the Internet. The two courses entitled *Digital Literacy* were different in terms of curricula. In the second, we incorporated new tools such as wikis, podcasts and social networks that hadn't been used in the first. I guess the virtual environment demands constant update from its users, but if they are not open the system may get stuck in a fixed attractor or stabilized state.

“An attractor is a region of a system's state space into which the system tends to move” (LARSEN-FREEMAN; CAMERON, 2008: 50). A fixed attractor is the simplest kind, “representing a system moving into a stable, preferred state and remaining there” (LARSEN-FREEMAN; CAMERON, 2008: 56). Openness and feedback sensitiveness ensure that the system will remain active and besides the message exchange above, which illustrates feedback from other people, I could illustrate some automatic feedback I received from the environment itself. When I was a tutor and had the virtual learning environment Eproinfo as interface, the system would alert me every time someone else from my class was online and that enabled me to interact with this person synchronically. It was a plus that I mentioned in one of my posts in our forum interaction.

[...] Anyway, I have just had an experience which showed me a positive feature of Eproinfo, I was online and two students entered the environment and I was warned that they were online and we could exchange some pretty interesting ideas.

Except from message posted on September 19, 2006.

Many individual changes have happened throughout my path as an online learner and teacher, and they have caused the system to change as a whole. I have become a more technological student and teacher and relied on the technologies available to me. I still have the notebook of my first distance education experience back in 2003 - I printed all the tasks and messages because I was afraid they wouldn't be there the next time I looked at the screen. Nowadays, I am still careful about data, but I have found different technological ways to guarantee that a technical flaw will not be limiting, as sending my powerpoint presentation to my e-mail besides saving it in my pen drive whenever I need to speak in public. Also, when working with virtual learning environments, I have learned to make a mailing list with my students' alternative e-mails for whenever I run into situations illustrated with the message to my Digital Literacy students below.

It seems that moodle worked for some minutes because I received messages from some of you but I have just tried to login and it didn't work. If it happens like the other times, it will just be working properly tomorrow, then we will postpone the end of our course by two days. I guess there will be no problem since we would end on the 23<sup>rd</sup> of November and we can take up to the end of the month. That's decided

then: IF MOODLE IS WORKING TOMORROW, ALL THE THREE FINAL WEEKS ASSIGNMENTS WILL BE DUE TO THE CONSECUTIVE TUESDAY. If the problem continues, I will send you guys other message.

Message sent by me on November 09, 2008.

All in all, I have illustrated that the system is nonlinear, unpredictable, sensitive to initial conditions, open, feedback sensitive and adaptable with some of texts I have produced in my online life. These texts were certainly produced in different genres, such as forum messages, chats, e-mails, although the ones I selected to this article were mostly e-mail messages. They were produced under the influence of the discourse communities I was affiliated to, basically, of my academic connections. Also, they were informed by processing procedures that were the tasks, which are the basis of a collaborative and constructive academic context. This leads me to conclude the sociorhetorical perspective I have adopted enabled me to conduct a coherent investigation of a complex process.

## **5. Final thoughts**

Swales (2004) mentions many people would have anecdotes to explain how their lives have been transformed by electronic communications and the Internet. All the excerpts portrayed in this article have a variety of anecdotes around them. Since it would be unwise to report all of them because of time and space constraints, I hope that

a sample will do, since I believe this system is fractal<sup>3</sup>, which means, if you have seen parts of the system, they can be a good representation of the whole. I guess I feel less technophobic as time goes by, and I hope that I can soon be in a state of further normalization (BAX, 2003), in which technological applications will have matured enough in my practice that they will not need much effort to work out.

My goal in this *textography* was to act as a *bricoleur* of my own professional life. The work of an interpretive *bricoleur* is to make a *bricolage*, a collection of representations that gather different pieces that fit in the specifications of a complex situation. The result of the endeavor of a *bricoleur* is an emerging construction (DENZIN; LINCOLN, 2003). I hope this construction has emerged while I finish writing this last paragraph. I also expect that different constructions emerge in the years to come, when I try other *textographies* such as this one again.

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<sup>3</sup> Larsen-Freeman and Cameron (2008) define a fractal as what is self-similar in different scale levels, so if you see a part, you see the whole.

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