

Ethnography and Complexity

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1. Introduction

Ethnography as logic of inquiry (Green, Dixon and Zaharlick, 2001) has been regarded as theory and method to investigating educational phenomena within and across sites of literacy and first language studies (Green and Bloome, 1997). Concerning English as a Second Language (EFL) research, however, ethnography has widely been utilized as a means of collecting and analyzing data from classroom events (van Lier, 1988). The central core of ethnography as logic of inquiry presupposes first and foremost that researchers take into account the multitude of social, cultural, political and economic complexities commonly found in the field of education. By the same token, ethnography as logic of inquiry has to carefully consider the complexities of the events under scrutiny, in a bid to represent reality as a complex, dynamic and mainly unpredictable system. Given that in complex systems agents are “constantly acting and reacting to what the other agents are doing” (Larsen-Freeman, 1997: 143), this paper aims at discussing some possibilities of interconnection between ethnography and complexity theory and its application to EFL research, besides being the first exploratory discussion of this subject in the field of EFL research in Brazil.

Traditional research characterizes itself for isolating parts of a specific phenomenon in order to study it. Nevertheless, a new research attitude enables the researcher to view her/his research object as a complex system. Second language acquisition (SLA) and classroom

culture are not different from several other human phenomena. They are also complex systems, comprised of different elements which interact among themselves, influencing and being influenced by the other elements in the system. Davis and Sumara (2006) point out that classrooms are “open, self-organized systems that operate far from equilibrium” (p. 25) and that learning should be “understood more in terms of ongoing renegotiations of the perceived boundary between personal knowing and collective knowledge” (p. 27). They also remind us that complex systems are open as “they constantly exchange energy, matter, and information with their contexts. In the process, they affect the structures of both themselves and their environments” (2006, p. 14).

As complex systems agents are “constantly acting and reacting to what the other agents are doing” (Larsen-Freeman, 1997, p. 143), in order to understand language learning, we need a methodology which takes into account the multitude of social, cultural, political and economic complexities that (un)predictably pervade the field of education.

It is our contention that ethnography as logic of inquiry is the best option to study the complexities of the events under scrutiny, in a bid to represent reality as a complex, dynamic and mainly unpredictable system. In order to develop this assumption we will present the characteristics of complex systems in section 2 and will discuss ethnography as a basis for understanding the complexities of SLA in section 3. Then we will present some conclusions with an eye to exploring this issue in a more systematic way in future research.

2. Some characteristics of a complex system

The main characteristics of a complex system are dynamicity, non-linearity, adaptability, self-organization, and emergence.

Seldom, if ever, is the system in equilibrium, given that **dynamicity** is one of the characteristics of a complex system. The system changes over time and so does its components. Changes happen often as the result of feedback and the system adapts itself to the new environment, learning from its experience. The changes are non-linear as the effect is not necessarily proportional to the cause. They are, in fact, chaotic. The system is apparently disordered, although there is an underlying order in this apparent disorder. Nothing is determined or predictable.

Another feature of such a system is thus **non-linearity**. Apparently, there are no causal relationships to explain how many things happen in nature, including learning or social interaction. Unpredictability seems to govern this kind of system. Kirshbaum (2002) explains that

the unpredictability that is thus inherent in the natural evolution of complex systems can yield results that are totally unpredictable based on knowledge of the original conditions. Such unpredictable results are called emergent properties. Emergent properties thus show how complex systems are inherently creative ones.

The complex systems are creative and the essence of creativity is unpredictability. Humans, for instance, are unpredictable learners and this characteristic is responsible for the emergence of creative learning experiences.

Emergence can be understood, according to Johnson (2002), as “what happens when the whole is smarter than the sum of the parts”. To put it very bluntly, Holland (1998, p. 122) explains that “the whole is indeed more than the sum of its parts” and we cannot understand the behavior of a whole system by “summing the behaviors of its constituent parts”. When researching human language learning, for example, one must take into account that we cannot

understand what it is by looking at isolated factors. We need a methodology whose tools can identify the associations among the different instances of the same phenomenon.

Another characteristic is **adaptability**, that is to say, the system capacity to reorganize itself in reaction to the interference of external agents. This marked characteristic of the system leads the latter to **self-organization**, or the system's ability to search for organization whenever it has been disturbed by surrounding forces. Thornbury (2001) reminds us that

systems that are left to themselves (closed systems) tend to run down – they move from order to stasis, just as an unwound clock will eventually stop. However, open systems – systems that are open to intake of new energy – may move in the opposite direction, evolving into more complex states.

Changes and perturbations make the system work and it gets increasingly more organized due to its own dynamics and, by being adaptive, they have the capacity to learn from experience and change. As the system evolves it increases in complexity and self-organizes itself.

There is enough evidence to argue that language learning certainly seems to be an adaptive complex system due to its inherent ability to adapt to the different conditions imposed upon it by individual and environmental constraints. To transform oneself from a speaker of one's native language into a speaker of a second or foreign language is a process as complex as changing from total order to chaos, and by chaos we mean "a long time behavior of a dynamical system characterized by a great deal of irregularity¹". It is our contention that ethnography can shed much light on this process as it does not focus on the product, but on the process.

3. Ethnography as logic of inquiry

¹ Glossary of Dynamical Systems Terms, available at <http://mrbs.niddk.nih.gov/glossary/glossary.html>

Ethnography as logic of inquiry has been considered one influential means of exploring and describing specific cultures and communities of practice within education. Intertwined views of classroom dynamics with wide ranges of social practices have been the core issue of school ethnography and its logic of investigation. According to Athanases and Heath (1995, p. 263), “an ethnography can provide researchers, teachers, and other educators with rich documentation of learning as it unfolds and varies over time, leading potentially to insights into cultural patterns, formulation of hypotheses for testing, and support for generation of theory”. The researcher can thus observe and at the same time be part of the dynamicity and self-organization of the system.

The term ethnography comes from the Greek word *ethnos*, which means people or cultural group, and the term *graphia*, which means writing or representation of specific groups of people through writing (LeCompte and Priessle, 1993). The etymological definition of ethnography carries in itself the explanation of what an ethnographer is supposed to do – describe specific cultures and groups of people, be they exotic groups from different cultures or groups within the ethnographer’s culture. Consequently, the ethnographic description of a culture does need long-term participation within the community investigated in order for the ethnographer to gain confidence from the people s/he analyzes and principally to build rapport (Spradley, 1980). Athanases and Heath (1995, p. 267-8), building on Talbert’s (1973) view of an anthropological basis for ethnography, calls our attention to this long-term period of exploration by arguing that

the discovery of cultural patterns [is] the primary goal of anthropology [and] long-term fieldwork in pursuit of that goal requires a period of at least a year of study and participant observation. The researcher becomes immersed in the culture as, at minimum, a “tolerated observed”. The researcher engages in

comparative science, using a relativistic view (treatment of language norms on their own terms), demonstrating sensitivity to context or the interrelated nature of social systems within which the culture under study is situated and the pursuit of complementary scholarly study to understand cultural patterns noted in the fieldwork.

Cultural Anthropology has split ethnography into two interconnected characteristics, that is to say, ethnography as *product* – ethnographic writings and descriptions of particular cultures, and as *process* – techniques and methods of acquiring knowledge of specific groups or communities by using fieldwork and participant observation (Sanjek, 2002). Albeit the product of ethnography is the main aim of any research conducted by ethnographic principles of knowledge and cultural description, the processes of entering into the field, participating as an in-group member *inserted* in the community studied, building rapport, and exploring culture as the representation of the community under analysis are in fact the core of ethnography as logic of inquiry. By doing so, the researcher becomes part of the complexity of the culture under investigation, with the intention to allow her/himself to be influenced by the dynamics of the people studied as if s/he belonged to that community as a member.

Ethnographic research has not been asked to adopt isolated observation techniques *per se*, nor to exclude the voices of the people investigated from its writings. On the contrary, ethnography requires full participation of the researcher in the culture of the “other” and appropriate registering within ethnographic products (reports, monographs, and so forth) of the voices of the latter. The data is contextualized in a non-linear way and the researcher can see how everything is dynamically interconnected in a live unpredictable system. He or she can also view different levels of reality and different points of view.

Likewise, ethnography leads to the metaphorical view of the ethnographer as a bridge which constantly fills the gap between what is already known about that culture and what is to be known about the dynamics of that culture as well. Green, Dixon and Zaharlick (2001, p. 202) caution that

[a]n observer who enters with a predefined checklist, predefined questions or hypotheses, or an observation scheme that defines, in an *a priori* manner, *all behaviors* or *events* that will be recorded is *not* engaging in ethnography, regardless of the length of observation or the reliability of the observation system. Further, if the observer does not draw on theories of culture to guide the choices of what is relevant to observe and record, or overlays his or her personal interpretation of the activity observed, they are not engaging in an ethnographic approach from an anthropological point of view.²

In fact, predefined checklists may prevent the observer to grasp what emerges from the interaction among all the elements of the system that are inserted in that specific culture. One important but contentious conceptualization often cautiously approached by anthropologists is the uses of the term *culture*. The post-Boasian tradition of anthropological inquiry posits as to which extent culture maps out individuals lives and social practices and vice-versa, given the fluidity of the term, which is due mostly to the multicultural and globalized world individuals live in (Barnard and Spencer, 2002). Far from coming to terms with the controversial definitions and applications of culture within Anthropology, the concept of culture we find rather appropriate and suitable to the purposes of this paper is that of Frake³ (1977), as quoted in Spradley (1980, p. 9):

² For a translated Portuguese version of this work, see Green, Dixon and Zaharlick (2005b).

³ FRAKE, C. O. "Plying frames can be dangerous: some reflections on methodology in cognitive anthropology", *Quarterly Newsletter of the Institute for Comparative Human Development*, 3: 1-7. New York: Rockefeller University, 1977.

Culture is not simply a cognitive map that people acquire, in whole or in part, more or less accurately, and then learn to read. People are not just map-readers; they are map-makers. People are cast out into imperfectly charted, continually seas of everyday life. Mapping them out is a constant process resulting not in an individual cognitive map, but in a whole chart case of rough, improvised, continually revised sketch maps. Culture does not provide a cognitive map, but rather a set of principles for map making and navigation. Different cultures are like different schools of navigation designed to cope with different terrains and seas (Frake, 1977: 6-7).

Taking into account educational research based upon a purely ethnographic logic of inquiry, Heath (1982) states clearly that some problems may arise as to what school setting seems mostly appropriate to be studied as well as an ethnographic research to be carried out. Given that an ethnographic-oriented research aims primarily at describing a specific culture and its multiple and dialectical forms of social dynamics, Heath (1982) argues that school settings are just one part of the breadth of sociohistorical features an ethnographer may encounter and perceive within a culture. Bearing this assumption in mind, Heath (1982, p. 37) affirms that

when formal schooling is the focus of research, anthropologists attempt to study it in relation to the broader cultural and community context in which it exists. For example, the behaviors of pupils are ideally viewed not only in relation to fit or contrast with those of teacher, typical student, or successful pupil, but also with respect to home and community enculturation patterns of pupils and teachers.

What Heath (1982) attempts to show is the fact that ethnography in education, interpreted as logic of inquiry, may naturally lead to a juxtaposition of *complex* perspectives and procedures of investigation of the social dynamics under scrutiny that a unique perspective may not reveal. As an example of this juxtaposition is Solsken's (1992) long-term

ethnographic triangulation. Solsken contrasted one male student reading activities within different sites, more precisely, in his bedroom, during his family homework session, in the kindergarten and second grade class with a female teacher, and in his first grade class with a male teacher. Her research demonstrated that the student under analysis used to see literacy practices as women work, given her mother and sisters habits of reading at home, which explains his literacy problems with the female teacher. On the other hand, when attending the first grade class with a male teacher, the boy has considerably improved his reading skills, since he realized that literacy is not only women work in general. By tracing the boy's literacy development within three years of analysis, Solsken was able to construct a picture of the student's reading improvement and its interconnections between school reading activities, home reading activities and self reading interests. The results Solsken has found are heavily due to her long-term research and the possibilities this ethnographic procedure has provided. Consequently, knowledge emerged from the complexity of the boy's culture.

As we have been discussing so far, ethnography as logic of inquiry has gained considerable ground in educational research, principally in the field of literacy (see, for instance, Castanheira, 2000; Castanheira et al., 2001; Green and Bloome, 1997; Green, Dixon and Zaharlick, 2001; Heath, 1982). According to Rodrigues-Junior (forthcoming), in the field of second language teaching and learning in Brazil however, ethnography has been used more as a tool or orientation to research method than as logic of investigation, since research has more generally focused on ways of collecting data from an ethnographic perspective than taking into consideration the ethnographic logic of inquiry that necessarily needs to lie behind the research. This common tendency mostly leads to a misinterpretation of the fundamental principles and scope of ethnography in the field of second language studies in Brazil (for a

similar discussion in Anglo-American academy, see Watson- Gegeo, 1988). In view of the lack of research within this academic arena in Brazil, it is our future intention to look at how ethnography and chaos theory may shed light on the complexities commonly observed in different sites of investigation, being second language acquisition a particular one.

4. Conclusion

Ethnography methodology is in accordance with the complexity science as it focuses on observation and description of several layers of adaptive, non-linear, self-organizing systems, that is, with learning systems. In language learning contexts, ethnography knowledge emerges out of the interaction of the array of data such as observation, field notes, interviews with teachers and students, video and audio recordings, transcripts, etc. Besides that, the researcher is also seen as involved with the culture s/he studies. Davis and Sumara (2006, p. 16) state that “complexity thinking helps us actually take on the work of trying to understand things while we are part of the things we are trying to understand”. When doing ethnography, the ethnographer tries to understand the phenomenon as involved with it and not detached from it. The researcher subjectivity is both present in his observations and field notes and s/he is also part of the research context. Thus, the researcher, on the one hand, affects and, on the other, is affected by the other elements of the culture under investigation. The research develops itself through the juxtaposition of complex perspectives and research tools, revealing aspects of multiple forms of social practices, such as intertwined views of classroom dynamics.

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