

11 Collecting, transcribing, analyzing and presenting plurilingual interactional data

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Key concepts: recording equipment, data preparation, transcription, ELAN, CLAN, data presentation.

1. Introduction

Is it enough if I just use audio? How many recorders do I need? Isn't there an automatic way of transcribing? Which program is best? What do all those symbols mean? Why do different researchers use different symbols? Can I show my data in public?

Do those questions sound familiar? Interactional data is often central to research in plurilingual learning environments. However, getting a grip on the processes of collecting, organizing, transcribing, analyzing and presenting audio and/or visual data is possibly the most exciting, but also one of the most challenging things about learning to do qualitative research. Although the entire process is interwoven with other aspects of research discussed elsewhere in this handbook (e.g. ethics, qualitative research design), in this chapter we will try to set out some basic recommendations to guide the reader through different stages of what [Mortensen and Hazel \(2012\)](#) have called the 'data cycle'.

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How to cite this chapter: Moore, E., & Llompart, J. (2017). Collecting, transcribing, analyzing and presenting plurilingual interactional data. In E. Moore & M. Dooly (Eds), *Qualitative approaches to research on plurilingual education* (pp. 403-417). Research-publishing.net. <https://doi.org/10.14705/rpnet.2017.emmd2016.638>

2. Tools, resources and processes

This chapter starts out by dealing with some of the questions beginning researchers will most likely have before they even start recording (e.g. *what* to record, *why* and using *what instruments*). It will continue by discussing some aspects to be kept in mind when organizing a data corpus and selecting what needs to be transcribed and what does not. Some tips for producing both rough and fine transcriptions, as part of the analytical processes of the research, will then be given. Following that, some ideas for going further with the analysis will be introduced, although this aspect is mainly dealt with in the chapters in the first part of this handbook. Finally, we have included some hints for presenting interactional data publically, before closing with some of the issues that may be encountered during the research not mentioned elsewhere in the chapter.

Although we set out different stages of the data cycle, following from [Mortensen and Hazel \(2012\)](#), in a chronological sequence, obviously all of these processes are ones that we come back to time and time again throughout a research project. Rather than visualizing the stages as a simple, static flowchart, researchers should try to imagine something like a game of pinball, in which the researcher and the data roll back and forth, sometimes bumping into things and sometimes struggling, but this should not cause worry; if the process is thought through carefully, it is sure to be a fruitful game.

3. Before recording

3.1. What and why am I recording?

It is easy to assume that the process of analyzing comes after having collected the data; however, this is far from the reality. There are several considerations that are intimately linked to the analytical process that we have to take into account before we get into recording properly. Among them are the following:

- What initial questions do you want to set out to answer and what do you need to record in order to answer them?
- How important is fieldwork before starting recordings? That is to say, should you be using ethnography as a first or proto-analysis helping to shape your decisions on what and how to record, or are you just following your intuition?

Putting some thought into these two aspects before the technical aspects of recording can be considered – such as the number and quality of the device(s) to be used, or their position (see the next two sections below) – will enhance the quality of the data collection.

In terms of the first, the research questions will be basic in order to organize and give direction to the project, but also to help think about what kinds of data is needed to answer those questions (Silverman, 2003). Research questions have to be able to be answered; that is to say, they must be able to guide the researcher towards the kinds of data they will need. At the same time, this initial guidance must not lead to rigidity in the research process. As Silverman (2003) points out, astute researchers should always be willing to alter their focus as they continue to learn both from others and from their own data throughout the research process, and this is a feature of most qualitative research. Thus, the questions will change and be refined many times as data is gathered and the researcher becomes more familiar with what it is telling them, but the process does need to start from an initial focus of enquiry.

In terms of the latter, it is important to understand that the process of data collection in qualitative research (e.g. in the form of field notes) usually starts before audio and/or video recordings are gathered. Fieldwork for understanding the kind of activities people carry out at the site, and for understanding the broader ecology, is usually crucial for making decisions about how to record – such as the best conditions for setting up the camera(s) or voice recorders, or what visual field to cover (Mondada, 2012) – and often important for latter

interpretations of the data. It is also essential for developing relationships of trust with research participants.

3.2. Should I record audio or video?

One of the decisions that most seems to worry beginning researchers when starting out on a project relates to the type of data to collect: audio and/or video? It is often tempting to record only audio as it can seem less intrusive for participants than filming with a video camera, and beginning researchers are often scared to make an impact on their site that would alter reality. Furthermore, in some sites, due to the sensitive nature of the activities taking place or the vulnerability of participants, it is not possible to gain permission to record video at all (see the chapter by [Dooly, Moore, & Vallejo, this volume](#), on ethics and obtaining informed consent).

However, more and more researchers are interested not only in oral language, but also in multimodal aspects of interactions. As [Mondada \(2008\)](#) points out, using video recordings for the study of interaction is in fact not new at all, but goes back to the 1970's. The importance of aspects such as body position, gaze, facial expression, the manipulation of objects, spatial organization, etc., for understanding interaction is being taken more and more seriously in many streams of qualitative research, and might be essential to being able to fully answer the research questions asked.

For this reason, if video recordings are not a problem for participants, they are very highly recommended. Rather than worrying about not affecting participants' natural interaction by recording them, researchers should spend time considering how they might develop trust through fieldwork, and take the presence of themselves, the recording equipment and other factors explicitly into account when interpreting the data. It is important to be honest, transparent and reflexive in analyses, which also means analyzing the researcher and the recording equipment as participants in the activities being interpreted.

We recommend that novice researchers consult [Mondada \(2011\)](#) to decide what kind of device to use and to understand basic techniques of video recording for research purposes.

3.3. Recording equipment

Guidance from the research questions and the proto-analysis of the site will allow researchers to decide what kind of devices they might use (audio, video, both) and the quality of the devices they will need. Prior to recording, the complexity of the recording set-up will have to be determined, which might range from the simplest configuration consisting of a single audio recorder and/or a single camera, to a more complex set-up with several cameras ([Mondada, 2012](#)). In this regard, there are pros and cons that will have to be weighed up. By using a single camera some important events might be missed, but using a complex set of cameras can result in fragmentation of the event and some extra work in assembling and understanding the situation later on (e.g. in synchronizing the data, see below), as well as being overly intrusive in some sites.

Technology changes fast, so it is difficult for us to give specific recommendations on the latest recording equipment available. We recommend the TalkBank website (see reference below), which is maintained by experts in the study of multimodal interaction, for updated information about audio and video recording equipment that is useful for research purposes.

Depending on when and where recording is going to take place (e.g. how much environmental noise there is) and the detail needed to be picked up (e.g. if aspects such as voice pitch or intensity are important to the analysis, using a program such as Praat may be advisable), anything from a mobile phone with recording capabilities (the latest smartphones can collect some excellent data in the right environmental conditions) to professional video cameras will be needed. The basic recording equipment for a postgraduate or doctoral project would probably include two recorders, because it is always important to have a backup of the data (e.g. a mobile phone and a tablet, a video and an audio recorder). If recording

will take place in a noisy environment, it is highly recommended to use good microphones linked to a video camera, or quality audio recorders, especially if the aim is to produce detailed transcriptions for the analysis (for example, if a conversation analysis approach is taken, or a program such as Praat is to be used). Quality audio data will also simply save time and energy when transcribing.

If two different recorders to capture the same interaction are used, as we have mentioned above, the media files will most likely need to be synchronized later (see the section on synchronizing audio and video below). A very simple tip, taken from [Mortensen and Hazel \(2012\)](#), will save researchers a lot of time later. When all the equipment is turned on and recording, it is a good idea to simply clap your hands once loudly. This sound will be much easier to locate in all the recordings as a synchronization point than any others.

4. Preparing to transcribe

4.1. Organize your data into a corpus

Computer-Assisted Qualitative Data Analysis Software (CAQDAS) packages, such as Nvivo or Atlas.ti (see chapter by [Antoniadou, this volume](#)), are probably the most sophisticated way of organizing all the data collected into a corpus. However, simply making folders that are coded (e.g. by date - 20152305) in the same way as the files put in them (e.g. Pepe_20152305.mp4, Marc_20152305.doc) on the computer hard drive, together with a spread-sheet listing all the data collected, may suffice for the project. Whichever way data is stored, it is imperative to keep it backed up, absolutely always!

4.2. Synchronizing audio and video

If a separate audio and a video recorder have been used, the sound quality from the audio recorder may be better than the sound from the video recorder. In

this case, before transcribing, it is highly recommended that the better audio be added to the video file. If two video cameras have been used, it might also be a good idea to join them side-to-side so they play together, which can be done with most video editing programs. The online Tutorial for Transcribing Plurilingual and Multimodal Data (Moore, n.d., see reference below) explains some ways to synchronize data. It is important never to delete the original files! One never knows when they will be needed again.

The transcription programs listed below all include features for synchronizing different video sources if various cameras have been used, so if using one of them, data may not have to be synchronized previously. However, synchronization might be a good idea when preparing files to present in public, for example at a conference.

4.3. Deciding what to transcribe

The decision about what to transcribe is ultimately, like recording, linked to the questions being asked. Deciding what data to transcribe is therefore another important part of the analytical process. It is also one that will be returned to time and time again, given that as qualitative research advances, as we have already mentioned, questions tend to change, sending researchers back to the data corpus and to transcription. It is important to take into account that it is not always necessary to transcribe an entire corpus. If the data is stored well, it will always be there to come back to – and researchers should come back to it.

In deciding what to transcribe, although it might suit researchers to work through their audio or video files and take notes about interesting fragments using pen and paper, a word processor, etc., to later transcribe those fragments, it is recommendable to digitalize the process to help find the fragments easily later on. The online Tutorial for Transcribing Plurilingual and Multimodal Data (Moore, n.d., see reference below) explains how to do this using the program ELAN, although this can also be done with CAQDAS software (see chapter by Antoniadou, this volume).

4.4. What program should I use to transcribe?

Once decisions have been made about what to transcribe, media files should be prepared for transcription (e.g. by synchronizing as was discussed above, by making snippets of the fragments identified as interesting, and always keeping the original media files). The next question relates to the technicalities of producing the transcription. Although many researchers produce transcripts using just a media player and a word processor, there are several programs available for helping to transcribe audio-visual data. Of these, some commonly used programs are: CLAN (free), ELAN (free) and Transana (about USD60, with a free trial version). Other CAQDAS packages, such as Nvivo or Atlas.ti (see chapter by [Antoniadou, this volume](#)) also include transcription functions, although they also allow transcripts produced using other programs to be imported.

5. Transcribing

5.1. Rough transcription

As has been suggested already, once the data corpus has been organized and the researcher is familiar with it, at least some of the data will need to be transcribed in order to analyze it in depth and share it with others in a written dissertation, publications, etc. Transcription usually involves two stages: first of all, researchers usually carry out a rough transcription, meaning one without details of prosody, gesture, pauses, etc. Once more specific sections have been selected for in-depth analysis, researchers proceed to produce finer transcriptions.

The first rough transcription will be done by listening to and/or watching the selected data and writing out the verbal content of interactions, without any specific symbols. It is important to remember that even this rough transcription is also part of the analysis, as decisions are made about what is going on in the interactions, certain phenomena are noticed, etc. As the content of the interaction is worked through, certain utterances and actions will be assigned to certain participants, for whom pseudonyms should be used (see the chapter by

Dooly, Moore, & Vallejo, *this volume*, on ethics). It is important to decide what pseudonyms to use for each participant and to keep a record of that, especially when there are many participants in the data.

5.2. Fine transcription

After completing an initial, rough transcription, researchers usually go back and add symbols to best represent the multimodal features of the data they wish to analyze in depth (e.g. intonation, stress, rhythm, gesture, gaze) in text form. Conversation analysis is the field that has worked most on the development of transcription symbology, with the most standard conventions being those developed by Gail Jefferson (e.g. 2004). There is also the option of using the ICOR conventions developed by the team at the ICAR laboratory of the Université de Lyon 2, or those by Mondada (2014). Some authors in the volume use other conventions, including those developed by GREIP over the years following, on the one hand, those proposed by Jefferson and, on the other, those adopted by Payrató (1995), based on Du Bois (1991) (see Corona, *this volume*; Dooly, *this volume*; Masats, *this volume*; Nussbaum, 2006).

When adding symbols to a transcript, it is important to think carefully about the level of detail to include. The tutorials listed below by Antaki (2002) and Schegloff (n.d.), as well as the articles by Mondada (2008) and Nussbaum (2006), all listed in the reference section, should help make some decisions in this regard. A transcription including embodied actions and references to the material and spatial environment is what we call a multimodal transcription. If one considers that language, bodies, artifacts, etc. all take part in communication, multimodality really should be taken into account when transcribing data.

When it comes to detail, as a general rule, absolutely nothing should be discounted as irrelevant to a research at the outset, at the same time as data should be approached with absolutely no preconceptions or theories that might sway the decisions made when transcribing (e.g. researchers should only ‘notice’ and mark those instances when codeswitching has a pragmatic function – if at

all – rather than immediately marking everything that looks like a change in language from a normative point of view). Researchers should try to understand what is relevant and what is not for their participants, as well as for the questions they are trying to answer. Therefore, if doing a multimodal transcription, it is not necessary to transcribe absolutely everything that the participants do (i.e. absolutely every micro eye or hand movement), only what seems to be relevant for the ongoing interaction to proceed and for the research. There is no doubt that these decisions require analysis from the researcher; as we have said, researchers are already interpreting their data as they transcribe it.

6. Analyzing interactional data

The process of qualitative analysis, especially in strongly interactionist traditions (e.g. conversation analysis), is basically manual, involving the researcher listening to and/or viewing their data over and over again, and being tuned into the phenomena that could be of interest for developing and responding to research questions. Furthermore, data sessions, in which data and transcriptions are presented to a group of researchers in order to triangulate analytical viewpoints, are a very useful way of ensuring the validity of interpretations and hearing others'. The basic organization of data sessions is explained in [ten Have \(2007, p. 140\)](#).

Some of the transcription programs also include some 'automatic' functions that can be run on completed transcripts that can complement a turn-by-turn, manual analysis of the data. The online Tutorial for Transcribing Plurilingual and Multimodal Data ([Moore, n.d.](#), see reference below) explains some very basic analyses that can be done using transcription programs such as CLAN. CAQDAS packages, such as Nvivo or Atlas.ti (see chapter by [Antoniadou, this volume](#)) include many more features in this regard.

In the reference section of this chapter, the link to [Bezemer, Domingo, Jewitt, and Price's \(n.d.\)](#) online workshop on Multimodal Methodologies For Researching Digital and Data Environments is of interest to anyone using multimodal data.

7. Presenting interactional data

When presenting data, besides practical issues, it is important to pay careful attention to research ethics (see the chapter by [Dooly, Moore, & Vallejo, this volume](#)). Every effort should be made to protect the real identity of the participants in the research by using pseudonyms in transcriptions, and ideally, by modifying audio-visual data when presenting it outside of one's research group (e.g. at conferences, in publications) and covering up faces. Common word processors and presentation programs include features to alter images using different artistic filters (e.g. to turn a photo into a sketch), or by adding solid shapes over faces when adding an image to a document or playing a video in public.

Another good idea when presenting video data in public is to add subtitles, to avoid having to refer to handouts that divert the audience's attention from the visual data. Most video editing software allow this to be done. The Tutorial for Transcribing Plurilingual and Multimodal Data ([Moore, n.d.](#), see reference below) explains how this can be done using some common programs.

8. Other considerations

These very important phases of research – collecting, transcribing, analyzing and presenting interactional data – can and probably will bring about certain problems, be they technical or otherwise. On the one hand, since researchers are working with technology, there is always the chance that something will not work (flat batteries, full memory cards, etc.). It is important to be ready to fix these problems on site and, therefore, a backup plan is needed (e.g. enough batteries to replace with, an extra memory card) in case something does not work.

On the other hand, and even though fieldwork will probably have been done to get to know the setting and the event before recording, there is always the possibility that something will have changed, or that participants will not react as expected. It is important to keep in mind that the process of recording is just

another part of the research and needs to be documented as such. It involves continuous reflection and interpretation and will only work out well if researchers are flexible, resourceful and ready to make quick changes to the plan if necessary.

Finally, if dealing with plurilingual data, one of the problems that could be encountered once the data is gathered is that the participants use languages that the researcher might not know. The collection, transcription, analysis and presentation of this kind of data are very interesting, but very complex. In these situations especially, research should be collaborative. It is important to try to work with others who speak the languages of the participants or, even better, with the participants themselves in a process of collaborative research (e.g. [Lassiter, 2005](#); [Nussbaum, this volume](#); [Unamuno & Patiño, this volume](#)), thus enriching the process and the resulting quality of the investigation.

All of the chapters in this volume work with the collection, transcription, analysis and presentation of plurilingual data to some extent. They are a great place to start to get a feel for the complexities involved in the process and the different decisions taken by researchers for responding to their diverse enquiries by studying interaction.

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Recommended readings

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Websites with resources mentioned

Programs for transcription

- CLAN program and manual (Windows and Mac, free): <http://childes.psy.cmu.edu/>
- ELAN program and manual (Windows and Mac, free): <https://tla.mpi.nl/tools/tla-tools/elan/>
- Praat (for phonetic analyses): <http://www.fon.hum.uva.nl/praat/>

Transana program and manual (Windows and Mac, approximately EUR60): <http://www.transana.org/>

Online tutorials (transcription, multimodal analysis, etc.)

Antaki, C. (2002). *An introduction to conversation analysis*. <http://ca-tutorials.lboro.ac.uk/sitemenu.htm>

Bezemer, J., Domingo, M., Jewitt, C., & Price, S. (n.d.). *Multimodal methodologies for researching digital and data environments*. <https://mode.ioe.ac.uk/training/>

Moore, E. (n.d.). *Tutorial for transcribing plurilingual and multimodal data*. <http://tutorialfortrans.blogspot.com.es/>

Schegloff, E. A. (n.d.). *Transcript symbols for conversation analysis*. <http://www.sscnet.ucla.edu/soc/faculty/schegloff/TranscriptionProject/index.html>

Other useful resources

ICOR transcription conventions: http://icar.univ-lyon2.fr/projets/corinte/bandeau_droit/convention_icor.htm

TalkBank recommendations about digital audio recorders: <http://talkbank.org/info/da.html>

TalkBank recommendations about digital video recorders: <http://talkbank.org/info/dv.html>

Published by Research-publishing.net, not-for-profit association
Dublin, Ireland; Voillans, France, info@research-publishing.net

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Enfocaments qualitativus per a la recerca en educació plurilingüe (Catalan)
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ISBN13: 978-1-908416-46-9 (Paperback - Print on demand, black and white)

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