Researching Multimodal Communicative Competence in Video and Audio Telecollaborative Encounters

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> Research is the process of going up alleys to see if they are blind.
> Marston Bates, 1906-1974 (American writer)

Research in areas as diverse as educational psychology, applied linguistics, sociolinguistics, anthropology, sociology, communication and didactics (to name a few) has undertaken increasingly more complex investigations into the roles of language, literacy and learning, especially as education in today's society falls under rising scrutiny. Among the key issues are the purpose of and appropriate approach to language and literacy education in a world dominated by technological advances. The need for a different, new type of literate citizen is often highlighted in public discourse as well as among academics.

> [T]he challenges that we face today in education are daunting […]. The world becomes more complex and interconnected at a lightning-fast pace, and almost every serious social issue requires an engaged public that is not only traditionally literate, but adept in a new, systemic literacy. (Seely Brown, 2008, p. xi)

As Kramsch (2006) argues, educational needs of today go beyond knowing how to communicate meanings; learners must come to understand the process of meaning-making itself. This implies sophisticated competence in the manipulation of symbolic systems -including the many variants of discursive modalities (spoken, written, visual, and electronic). Learners must be able to interpret meaning from discourse features, or as Kramsch (2006, p. 251) has put it, students must have "symbolic competence".

These considerations foreground the issue of modality in communicative competence (which is the baseline of most foreign language teaching approaches in the EU) and bring out the importance of how these competences must be taught (for more on communicative competence see Canale & Swain, 1980; Pica & Doughty, 1985; Savignon, 1997; Council of Europe (COE), 2001).

Researchers interested in studying language, literacy and communication have become more and more aware of the importance different semiotic modes hold as an integral part of meaning-making. This applies in particular to investigations of meaning-making in online interactions where different technological affordances provide various modalities for communicating. Key theorists in multimodality, Kress and van Leeuwen, define multimodality as

> […] the use of several semiotic modes in the design of a semiotic product or event, together with the particular way in which these modes are combined – they may for instance reinforce each other […], fulfil complementary roles […] or be hierarchically ordered. (2001, p. 20)

Of course, multimodality is and always has been part of meaning making; throughout history humans have used more than written or spoken words to communicate. However, within Western society, especially in the context of education, there has been a "dominance of writing as the means of communication and representation" (Kress, 1998, p.58). Still, this has been changing over recent decades, especially as the use of image has gained ground. In a large part, the shift from books to screens has contributed to this development, moving us "from print to post-print text cultures" (Lankshear, 1997, p.1). Kress (2003, p.1) talks about a "revolution in the uses and effects of literacy and of associated means for representing and communicating at every level and in every domain."

Early work by the New Literacy Studies movement[1] and by the New London Group gave a significant impetus to the study of multimodality in literacy and language learning. This work has highlighted the need to try to capture the complexity of 'real' literacy practices in contemporary society and through technological innovation so that these practices can be understood within their broader social context. These literacy practices have been called the 'new communicative order' (Kress & van Leeuwen, 1996; Lankshear, 1997; Street, 1998). This new communicative order is related to how new social practices of communication in many different domains (work, education, home, entertainment) are becoming increasingly more blurred and consist of many different simultaneous modalities. (For instance, a professional designer working from home may work with an interconnected designing platform, engage in a chat with avatars in virtual worlds and answer personal and professional emails from her Blackberry, all at the same time).

Thorne, Black and Sykes (2009) underscore the influence the New London Group has had on research perspectives in language education and multimodality.

> Over a decade ago, the New London Group (1996) put forth a manifesto that called for a broadening of traditional language-based approaches to literacy teaching and learning to acknowledge and accommodate emergent literacy practices catalyzed by "the multiplicity of communications channels" (…). (Thorne, et al., 2009, p. 804)

Language educators have begun to integrate the concept of this new communicative order (and the inevitable multimodality that accompanies it) into their teaching, as is reflected in COE's *Common European Framework of Reference for Languages: Learning, Teaching and Assess-*

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1   This is a group of independent but linked researchers, in a large part coming out of work by Gee, Street, Heath, Barton and Hamilton who specifically looked at literacy as a social practice. The notion of "new literacies" stems from work by Lankshear and Knobel in association with new communicative environments. Their work draws from both the New Literacy Studies and the New London Group (a team of academics looking at literacy practices in the new millennium).

ment (CEFR) (2001). Many teachers now recognise that words, images, sound, touch and other salient features of communication are all part of a wide spectrum of communicative practices and competences; language learning involves far more than 'knowing the language'.

In this context the benefits of Computer-Mediated Communication in language learning have been outlined in many of the latest studies, for instance as part of language socialization (Crystal, 2001; Lam, 2004; Thorne, 2003, 2008) or learner interaction (Smith, 2003, 2004; Schwienhorst, 2004; O'Rourke, 2005), to mention only a few areas of research. Thorne, et al., (2009) argue that CMC in virtual worlds and Massively Multiple Online Games (MMOs) can promote many assets associated with language learning.

> […] natural and unscripted interaction, reciprocal alterations in expert status, explicit self-correction and other-correction at the level of linguistic form, extensive repair sequences, development of an emotional bond, and exhibition of motivation by both parties for learning the other's language. (Thorne et al., 2009, p. 811)

Similar arguments can be posed for CMC in formal language classrooms. The application of 'telecollaboration' in language teaching and learning has a growing number of supporters, perhaps most significantly in blended learning environments, as it is seen as a means of achieving similar positive assets as those listed by Thorne et al. (above). (See Belz, 2003; O'Dowd & Ware, 2009; Dooly, 2010; Guth & Helm, 2010; Helm & Guth, 2010; Furstenberg & Levet, 2010 for more in-depth discussion.) In other words, in conjunction with the call for research in new literacies emerging from the relevance of Web 2.0 in everyday life, there is an evident need for investigation in Multimodal Communicative Competence (MCC) in telecollaborative language learning.

The Need for Research in MCC

As daily interactions in formal and informal language learning have switched to more online modes, researchers have underlined the mediating role of teacher, peers, setting, language, and technology (Lantolf, 2000) and in particular have begun to focus on communicative practices that are based on technological mediation (García-Carbonell, et al., 2001; Abrams, 2006; Belz & Thorne, 2006; Chun, 2008; Thorne & Reinhardt, 2008; Zheng, Young, & Wagner, 2009; Furstenberg & Levet, 2010).

Developments in CMC have brought about a move from mainly text chat and conferencing to multimodal environments that go beyond written language use (Stockwell, 2007; Panichi & Deutschmann, this volume). Audio-conferencing as well as desktop video-conferencing applications are increasingly used as a platform for communication, especially in the context of telecollaboration. The tools available (e.g. Skype, NetMeeting, Elluminate, Breeze, Flash-Meeting, DimDim and Gong) are environments with different modes for representation and communication including spoken and written language, visual and graphic systems, spatial systems and body language.

Such environments help bridge the distance between learners across time zones and geographical space and foster meaning-making in multiple modalities, including oral communication and interaction (Hampel, 2006). New modes of communication can be explored by learners and teachers together, for example, the use of emoticons (Negretti, 1999), icons such as social tagging (Godwin-Jones, 2006; Maggio et al., 2009), or avatars (Schneider & von der Emde, 2000).

Given the impetus of CMC in education, it is difficult not to concede that learners' needs and teaching designs are affected by the omnipresence of "the decentred, multimedia character of new electronic media", which is inevitably more complex "than the processes involved in working with pre-computer, linear text" (Warschauer,

1999, p. 11). To begin with, there is a need for different types of reading (reading for gist, scroll reading, conceptually linking different texts available through hyperlinks, etc.), not to mention the knowledge needed for diverse navigational aspects (Pegrum refers to "hypertext literacy" (2009, p. 38)). Added to this list are the additional modalities available in Virtual Environments (VEs) or Virtual Worlds (VWs) where communication can be text-based (instant messaging and text chat) or may also draw on gestural, visual, proxemic and deictic non-verbal modalities.

As Ciekanski and Chanier (2008) point out, learners' interaction in multimodal settings affects both their focus and their engagement within the learning process – the telecollaborative task may prioritise fluency over accuracy, for instance. This suggests the need for further research into telecollaborative language teaching and learning strategies and how teachers design telecollaborative exchanges. It has been argued elsewhere (Hauck, 2010) that among the various forms of learning, computer supported collaborative learning is particularly well suited to raising awareness of online modes and meaning making and to fostering the development of multimodal literacy.

Learning possibilities are especially evident in telecollaboration, due to the close link between collaborative learning and second language acquisition through a communicative teaching approach (Allford & Pachler, 2007; Dooly, 2011 *in press*). Collaborative learning and the Communicative Teaching Approach (CTA) are now well-established precepts for language teaching (see Johnson & Johnson, 1989; Johnson, Johnson, & Holubec, 1993; Chen, 1999, Kessler, 1992, McCafferty, Jacobs & Da Silva Iddings, 2006). Consequently, collaborative learning between distanced partners is of growing interest for researchers and provides a backdrop for research into multimodal literacy in telecollaboration (e.g. Simpson, 2005; Örnberg Berglund, 2009a; Thorne et al., 2009; Develotte, Guichon, & Vincent, 2010). Inevitably, the general communicative competences that are integral to telecollaborative language learning underscore the urgent need for research in multiple practices and multiple modality competences.

Carrying out research in multimodality

A first step for research is deciding upon the investigative method to be adopted for exploring specific research questions. Research methods can be classified in various ways but they are often heuristically divided between qualitative or quantitative methods. Of course, a research design, e.g., how the chosen method is applied, may actually combine both qualitative and quantitative approaches (mixed methods; see Ware & Rivas, this volume). See also Reinhardt (this volume) for an in-depth discussion of theoretical and analytical frameworks applied to CMC research.

Briefly, quantitative methods rely on numerical data (e.g. surveys or questionnaires, sampling) to consider 'how many' and 'how often' in regard to a particular phenomenon. The principal aim is to classify specific features, count them and perhaps compare them with other numerical data in order to create statistical models that explain what has been observed in the study. For instance, a researcher might use quantitative statistics to find out which emoticon is most favoured by a certain profile of users or how often chat is used during a video-conference during telecollaborative interaction.

The use of quantitative data may mean the omission of contextual detail. Researchers using quantitative data must be aware of issues such as statistical significance, inappropriate statistical inference, inaccurate measurement or scaling, interferences in sampling, and problems with missing data (Maxim, 1999). For more information on quantitative research see Black (1999); Morgan, Reichert & Harrison (2002) and Neuman (1997).

Qualitative methods aim to provide a detailed description of what is being studied. They may encompass many different types of approaches, ranging from case studies to recording of interactions in the participants' everyday situations (versus laboratory settings). Data is typically in the form of words (e.g. transcriptions), images (e.g. screenshots) or objects (e.g. students' output). Here, the researcher can be the object of study; for instance a teacher may videotape and

log all his exchanges with students while online to observe how multimodal features shape the communication during the interaction (practitioner research, Lamy & Hampel, 2007). Another productive approach to research in MCC is action research (AR) – a form of self-reflective enquiry undertaken by participants in social situations in order to improve their own practices and to gain more insight into what is going on in the whole process. (See Carr & Kemmis, 1986; Stringer, 2007, for more information on AR.) To give an example, a researcher-teacher interested in observing (and ultimately improving) the quality of instruction-giving in video-conferencing may implement action research, drawing on qualitative data of different phases of instruction-giving and instruction-interpretation.

Qualitative data provide rich, contextualised descriptions of the observed features of the study; such approaches focus on process rather than outcomes and are inductive (the researcher builds from abstractions, theories and observations). Observation is the principal means of data collection. Hence, this type of research tends to be time-consuming and cannot be applied to widely dispersed contexts. Researchers must be aware of issues such as organization and management of large amounts of data, difficulties in data coding and the need to control researcher bias. For more information on qualitative research see Silverman (1993, 2000) and Neuman (1997). For detailed explanations of research in online communication, see Lamy & Hampel (2007).

Compiling a Corpus:
The Complexity of Multimodal Data

The way in which the researcher collects and organises the data will depend on the type of research being carried out and the focus of the research question(s). It is assumed that the reader of this chapter is more likely to be interested in carrying out primary research (based

on original data) than secondary research (based on secondary sources from other research). Thus, we begin by looking at data collection.

A principal question for researchers interested in multimodality is what may be considered researchable data, especially considering that multimodal data is complex and diverse (and more so in the context of telecollaboration, particularly if the exchange involves the use of a mix of asynchronous and synchronous online tools, with distanced partners). The following screenshots (taken from some readily available conferencing applications such as *FlashMeeting* (figure 1), *Elluminate* (figure 2) exemplify the degree of complexity of such data:
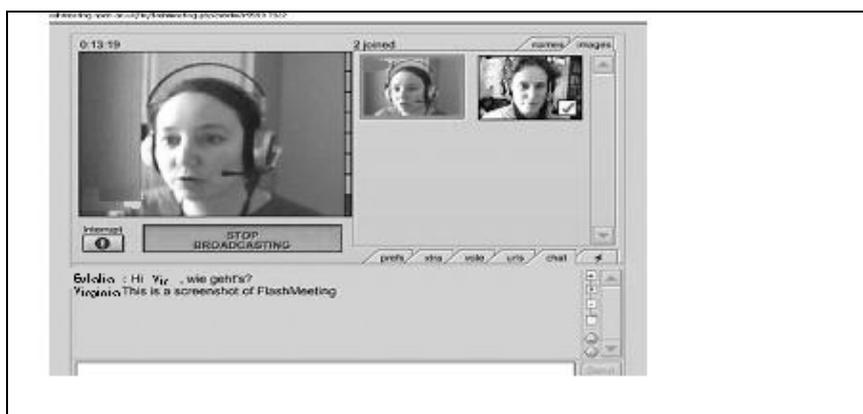

Figure 1: FlashMeeting (http://flashmeeting.e2bn.net/) (names of participants have been changed; permission to publish visual data obtained)

In *FlashMeeting* one user speaks at a time, taking the 'video slot' on the left hand side while others are visible as 'low-refresh' thumbnails on the right. The others can queue to speak, and take the video slot. At the same time public text chat can be seen by all users and various other features are available such as icons (for example a green tick or a red cross for voting or to express agreement or disagreement as well as a question mark to signal that further information is required), an onscreen whiteboard (hidden behind the "xtra" tab) and shared urls (behind the "url" tab).
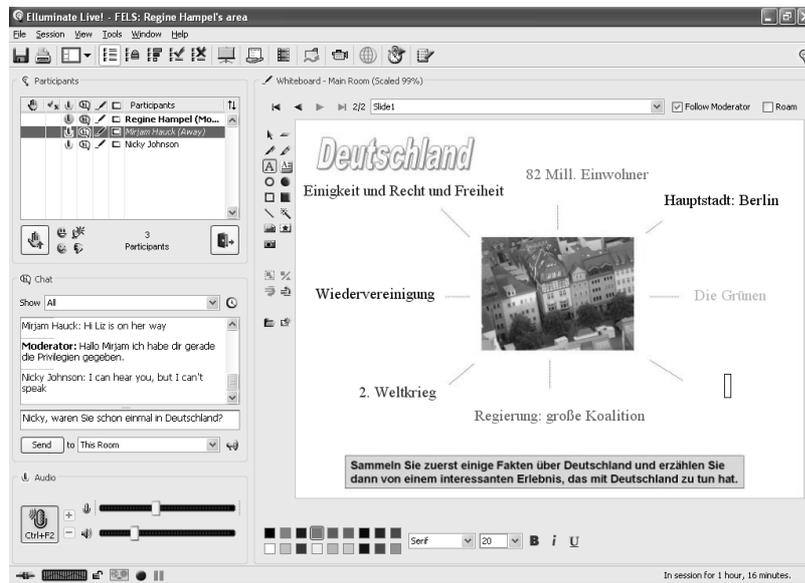
Figure 2. Elluminate (http://www.elluminate.com/; permission to publish visual data obtained)

In *Elluminate* up to six participants can engage in simultaneous talk. As in *FlashMeeting,* learners and teachers can work together in real time (and *in situ* negotiation of meaning-making inevitably takes place) through audio-conferencing and tools for the exchange of graphical and textual data. The whiteboard is for writing and drawing and also allows users to upload images which can then be jointly manipulated. It is also possible to embark together on a Webtour.

The text chat provides space for additional synchronous textual input, again both bi- and multidirectional. In addition, the system allows users to create their own virtual "rooms" with all of the above functionalities where they can meet in pairs or small groups. Up to six participants can also switch on their webcams at any time during an online session. In short, conferencing applications offer researchers numerous possibilities of multimodal data.

Managing a Data Corpus:
Transcripts and Tools

The data generated in such settings requires tools for data capturing, description and analysis that can cater for its complexity. The data often includes information about entrance into and exit from virtual areas of participation, visual and simulated gestures, intonation (oral or simulated through emoticons or other symbols), volume of voice and so forth. Yet, transcriptions have typically relied on the use of written scripts, as can be seen in the extract in figure 3. One of the more common transcript notations comes from Jefferson (2004); see Annex. In MCC research, transcripts are often qualitative as seen in figure 3. These transcripts will include various descriptions for con-textualisation, for instance, which tools were employed simultane-ously or participant 'gestures' with emoticons.

Figure 3. Example of a transcript from a session in Lyceum (names of participants have been changed)

There are applications that have readily available features for compiling data from telecollaborative exchanges. These applications often render quantitative transcripts. In figure 4, it is possible to see the communication of eight participants in a 59-minute session. The diagram in this illustration shows the overall pattern of tool use in one particular session. The diagram includes information on participants using the audio channel, text chat, emoticons, voting buttons, and the queuing button. The top row represents everyone's audio contributions, while the other rows represent each participant and their contributions via the audio channel (indicated by bars of different lengths) and the other tools.
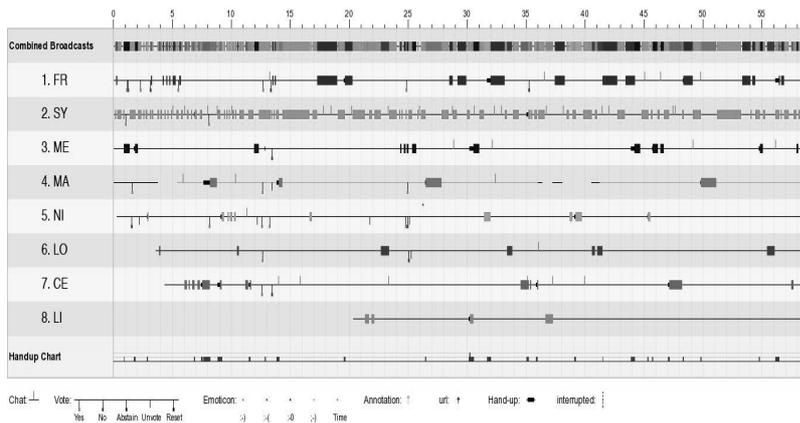
Figure 4: *Flashmeeting* transcript (automatically generated by the system after a session)

Typically, the researcher designs the transcript recording according to the research focus. Figure 5 shows the interaction in a telecollaborative exchange that took place in an internet-based audio-graphic conferencing environment called *Lyceum*. The platform provides multiple synchronous audio channels as well as synchronous text chat and several shared graphical interfaces. The transcription incorporates the temporal sequence of the session (columns) while also describing spatial elements (rows). The researcher may decide to use quantitative and qualitative transcripts. In figure 5, the interrelation between the modes has been given more prominence by concentrating less on

detailed audio transcription and more on the diversity of modalities used by those who took part in the interaction.

Part	Date	Time	Film clip		Participants		
1	2/5/2004	00:00:05 - 00:19:52	ARC Project 020504.avi		Students 1–5, native-speaker (NS) informants 1 and 2, researchers (Uschi, Mirjam)		
turn id	start time	actor	audio	text chat	vote	other tools	comments
	00:18:18	Mirjam	können das mal alle bestätigen ob sie diese konzept map sehen - bitte? - **(v29)** **(v30)** (1) **(v31)** **(v32)** (1) **(v33;34)**				Mirjam wants everyone to confirm that they can see the concept map.
vote29		NS informant 1			yes		
vote30		Student 1			yes		
vote31		Uschi			yes		
vote32		Student 2			yes		
vote33		Student 3			no		Student 3 replies no.
vote 34		NS informant 2			yes		
audio97	00:18:27	Uschi	ja ich sehe sogar zwei - woll soll soll (ich) lieber nur eine aufmachen? (1)				
audio98	00:18:33	Mirjam	ja und zwar das kann man folgendermaßen korrigieren - in dem – [student 4] jetzt den gather (1) knopf drückt und dann kommen wir alle automatisch zu [student 4] (7)				
audio99	00:18:51	Mirjam	(gar langsam)>				
audio100	00:18:51	Student 4	<und wenn ich jetzt zum beispiel (1,5) (I12) auf eh - (remove) drücke auf der recht in den rechten oben ecke kann ich denn das also die konzept map (entitled) eins - schließen (3)				
line-up12		Mirjam					
audio101	00:19:07	Mirjam	könntest du das bitte [mal machen?]				
audio102	00:19:08	Student 4	[(wer will das)] machen (3)				
audio103	00:19:12	Mirjam	langsam noch eine frage [student 3] [student 3] können - kannst du **(ot2)** sehen? kannst du die konzep map (1) ah (jetzt) hat einer alles zugemacht - ok – [student 4] bitte noch mal von vorne (6) **(ot3)**				Mirjam picks up on vote33
other tools 2		Student 4?				the concept map is closed again	
other tools 3		?				the concept map is opened	
audio104	00:19:28	Student 4	Ehm - ja also - also super jetzt hats jemand aufgemacht ((*giggles*)) gut (2) (I13) (2) **(t13)**				
line-up13		Mirjam					
text13		Student 1		Bitte sehr			

Figure 5: Transcript of an extract from a recording of a session in *Lyceum*

It is worth noticing that the modality used for transcription is still written language (as in figures 3 and 5) and in figure 5 the layout gives the verbal element prominence as it is placed towards the left hand side. Thibault (2000, p. 318) points out that the layout of a matrix may create a false impression within Western traditions of visual literacy, because what is being placed on the left is doubly privileged by giving it both temporal and logical priority.

For researchers, this brings up the question of whether language-based techniques are the appropriate tool for analysing multimodal data and if not, what kinds of tools are required? The need to research contextualised discourse events realised through evolving technologies has given further impetus to recording audio and visual data. It is now possible to record interactions both in formal as well as informal contexts and transcribe them in ways that take close account of the social context. Currently, there are several resources available for automatically collecting data from online interaction such as Camtasia or Screenjelly (see figure 6)

Figure 6: Example of student activity captured by Screenjelly

There are also several Computer Assisted Qualitative Data Analysis Software (CAQDAS) packages available such as Elan, Transana, NVivo ATLAS.ti, MAXqda, HyperRESEARCH and QUALRUS which allow researchers to store and analyse multimodal data in a systematic fashion.

When it comes to organising and analysing the data (as well as the reporting of findings) written and spoken language are still usually the centre of interest, especially in telecollaborative language learning settings. Yet, on their own, written and spoken language provide only partial evidence. Modalities of communication such as intonation, gestures, gaze, etc. are often still described in their relation to spoken and written language and not as separate meaning making and communication modes in their own right. As a result data is often lost in translation or its status is reduced to context (Flewitt, at al., 2009).

It is, therefore, recommended to start from generally recognised protocols and then to adapt them as needed. At the same time, these adaptations must be meticulously noted and a key provided when

results are analysed and published, along with a contextualisation of the data setting. "The transcription literature across three decades has emphasized the need for researchers to be explicit about transcription" (Davidson, 2009, p. 46).

Of course, if the researcher hopes to encompass the complexity of the data, and therefore to record qualitative differences in how body, gestures, voice and other modalities are used within the social and technological settings of the interaction, then a more complex notation system may be necessary. This need has been recognised by many high-profile researchers and has resulted in multidisciplinary projects (e.g. TalkBank) that propose the integration of high-level interface (for instance in Java) that stores annotation data as XML.

Increased capacity for multiple-level annotation and easily captured online data are two aspects that can make the task of researchers working on multimodality in telecollaboration "much easier than their non-networked colleagues" (Lamy & Hampel, 2007, p. 183) but these features do not necessarily help the researcher "to understand the meaning-potentials of the resources as precisely and as explicitly" as possible (Kress, 2003, p. 24). Nor can these technologies "automatise all the processes" (Lamy & Hampel, 2007, p. 183). Again, the necessity of a reliable notation system comes to fore:

> What is transcribed depends on the research context and on what the researcher is trying to find out, but transcriptions must be recognised as reduced versions of observed reality, where some details are prioritised and others are left out. (Flewitt, et al*., 2009, p. 45)

In the case of multimodal research the need for combining new forms for transcripts is patent since transcriptions of language must also include transcription of action (Norris, 2002, 2004) and social context. Researchers have recognised the challenges of translating data from one medium to another, especially when trying to reproduce the richness of video images. Innovative approaches are becoming more common: Norris (2002, 2004) describes and illustrates the data through step-by-step images. Kendon (2004) uses simple line drawings based on video freeze-frames, with dialogue written be-

neath them; Rogoff (2003) makes pictorial representations taken from screenshots; and Goodwin (2004) employs a similar method that includes gesture descriptions in the drawings. Plowman and Stephen (2008) have integrated technology for creating comic strips to represent specific events in their data.

Clearly, there are many tools available that facilitate data compilation and data management. Researchers interested in studying some aspect of MCC are encouraged to explore different avenues, guided by the underlying research questions while acknowledging their influence on: a) choice of tool(s) for data capturing, and b) the approach to transcribing and representing the data and thus –irrevocably– the analysis and the findings.

Another important factor to consider is the question of anonymisation of the participants. Inevitably, the use of screenshots or similar representations implies a visual identification (even when the names of participants are changed). The researcher must consider carefully whether the disclosure of visual data is ethical and should endeavour to always have permission to record and use visual images. Technology for changing facial features may be employed; however, again, this may affect the research itself –especially if the focus is on eye contact, facial gestures, etc. The use of visual and audio data with young students is especially problematic –and this is precisely the area where research in telecollaboration might make a valuable contribution. Bearing all of these questions and issues in mind will help the researcher decide which tool is most suitable for capturing and managing the data needed.

Analysing Multimodal Data

We have seen that there is now an ample range of technological tools for data collection and new data analysis resources have become widely available and affordable. However, the underlying logic of

data coding in these software packages may be, by its very nature, biased towards coding. Such bias can shape the processes and outcomes of data analysis. For instance, some of the coding schemes in these packages are hierarchical, and most impose a linear, time-oriented format on transcripts. And inevitably, these tools do not interpret or analyse the data.

Researchers must consider which is the best way to analyse and summarise the data in a time efficient manner. They may be starting out with a pre-existing analytical framework (e.g. the application of content analysis to text chat according to Herring's (2007) proposed coding scheme). Or they may devise their own framework. In the case of a new or derived framework, the researcher should strive to make their analysis 'trail' as detailed and auditable as possible.

In the case of MCC research, it is almost inevitable that any established research position will be 'altered' to take into account new modes of communication that are not usually considered in face-to-face situations. For instance, Örnberg Berglund (2009b) takes an ethnographic perspective to study disrupted turn adjacency and communicative coherence. However, unlike traditional ethnographic studies, MCC does not necessarily require physical access to the subjects of the study. This implies careful consideration of how to contextualise the study since the research may only have 'partial' access to the study participants.

Satar's original approach (unpublished thesis) analyses every aspect of multimodal data to find evidence of 'social presence' in language learner interactions via Desktop Video Conference (DVC), and uses Atlas.ti (fig. 7).
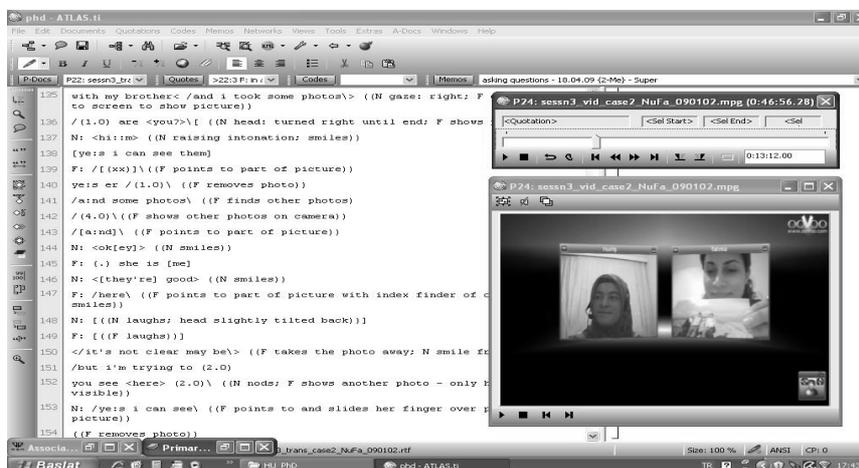
Figure 7. screenshot of the use of Atlas.ti (http://www.atlasti.com/) (Permission given to
        publish visual data)

Linking visual interactions with the relevant transcription allows tri-
angulation of different types of data. Another example of multiple
data sources is the work done by Develotte, Guichon, and Vincent
(2010). Their work focuses on how language teachers learn to teach
using Skype, focusing on how the participants use their webcams and
other multimodal resources during the pedagogical interaction. The
study combines the use of screen capture recordings and semi-
directive interviews with teacher trainees, thus merging online and
face-to-face data.

      Multimodal audio-video data may not even 'belong' to the 'real'
world. Researchers interested in the development of effective lan-
guage learning environments in Virtual Worlds often employ audio
and video for capturing multimodal data. Combining traditional eth-
nographic studies with conversation analysis of Virtual Worlds can
help educators understand learner participation that goes beyond
learners' voiced interaction (see Panichi & Deutschmann, this vol-
ume).

      Analysis of qualitative data can be through random sampling, but
a clear rationale for the choice of data inclusion must be provided.
For instance, in the case of research in MCC, a clear rationale of why
a particular mode has been featured should be given along with a

rationale for the method chosen for exploring it. Transparency of data collection and management are also vital: how were data stored and then used for analysis? Which modalities were captured and why? Which data were transcribed and why? The investigation should be clearly contextualised and all the relevant information which might affect the results should be made explicit.

Researcher reflexivity has not been mentioned until now. This refers to a clearly delineated positioning (and description) of the researcher's role in the whole research process. It implies carefully considering and acknowledging how researcher presence may influence the data collection, management, analysis and presentation. Above all, reflexivity may compel the researcher to strive to ensure that findings are useful and applicable to other researchers and educators in the field.

Research into Multimodal Communicative Competences is complex and challenging. At the same time, there is promise of exciting, innovating horizons for future researchers willing to explore expanding parameters of communication opening up exponentially with each new generation of language learners.

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