Technology as *Pharmakon*: The Promise and Perils of the Internet for Foreign Language Education

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Globalization and networking technologies have transformed the contexts, means, and uses of foreign language learning. The Internet offers a vast array of texts, films, music, news, information, pedagogical resources, sounds, and images from around the world as well as unprecedented opportunities for direct communication with native speakers in real time. However, the very technology that delivers these materials and interactions can produce subtle mediational effects that can influence how learners evaluate and interpret them. Focusing first on technological mediation broadly, and then on the specific context of desktop videoconferencing in a telecollaboration project, this article outlines the benefits and the potential pitfalls that computer mediation presents for the learning of languages and cultures. Specific attention is given to the question of what it means to mediate the foreign culture through interfaces that are familiar from one’s home culture. The principal argument is that the dynamics of online language learning call for a relational pedagogy that focuses on how medium and context interact with language use. The goal of such an approach is to expose students to a broader scope of symbolic inquiry, to connect present text-making practices with those of the past, and to foster a critical perspective that will prepare young people to understand and shape future language and literacy practices.

Keywords: technology; computer-mediated-communication; videoconferencing; telecollaboration; globalization; Internet

GLOBALIZATION AND THE INTERNET HAVE radically expanded language learners’ opportunities for exposure to foreign languages and cultures. Today, videoconferencing, email, chat rooms, online forums, social networking sites, massively multiplayer online games, collaborative writing and editing, and multimodal production tools provide new kinds of social encounters, new kinds of communities, and new prospects for learning. Business has not turned a blind eye to these opportunities: In just a few years, online language learning sites like Livemocha, Verbal-planet.com, and Babbel.com have attracted millions of members in hundreds of countries. This is part of a broader trend involving the development of massive open online courses (MOOCs) and complete online undergraduate and graduate degree programs (e.g., Laureate Education). Currently nearly one-third of all students in higher education in the United States are already taking at least one online course (Allen & Seaman, 2013), and recent market analyses estimate that by 2018 the global e-learning market will reach $169 billion (Global Industry Analysts, 2012). Hotly debated on college campuses is what effects computer-mediated education will have on students’ learning experiences and the kinds of values it will promote.

With regard to language learning, the Internet affords searchable access to a vast array of texts, films, music, news, information, pedagogical resources, sounds, and images from around the
world. It also affords unprecedented opportunities for direct and inexpensive communication across huge distances. This leads some to think that students no longer have to go abroad to seek out the foreign language and culture, for the Internet now brings the world of the Other to their desktop.

However, it is important not to lose sight of the fact that what one sees on one’s computer screen is a highly mediated, filtered, and designed version of the world. Technologically mediated interactivity is in many respects quite different from the interactivity of face-to-face encounters (Chen & Wang, 2008; Develotte, Kern, & Lamy, 2011; Hutchby, 2001; Kappas & Krämer, 2011; Wasson, 2006). As language educators, we must be attentive to the particular ways that communication technologies transform spatial and temporal relations and, accordingly, be willing to reconsider the understandings and beliefs that have traditionally underlain our practice. Traditional distinctions between the forms and functions of writing and speech, for example, are rendered problematic by an unprecedented degree of overlap in many online environments, making us rethink the dichotomy of orality and literacy. Monolithic standard language norms are problematized by networked communication that puts language learners in contact not only with native speakers from various regions speaking their own diverse language varieties, but also with second language users whose local norms may be nonstandard. Notions of cultural authenticity are similarly problematized by the anonymous origin and massive reappropriation of much material available on the Internet. Finally, multimodal texts that incorporate sound, graphics, animation, or video demand more symbolic sophistication and more critical thinking than ever if students are to resist being lulled into passive reception.

New forms of mediation have always given rise to new doubts, questions, and paradoxes. Plato, for example, disparaged the technology of writing because it weakened memory and produced only an illusion of truth. Yet he committed his dialogues to writing, and it is only because of this fact that his celebrated status has been maintained through the centuries. In his essay Platon’s Pharmacy, Derrida (1972) offers a close reading of Plato’s Phaedrus, noting that Socrates uses the Greek word pharmakon to describe writing. Derrida points out that pharmakon is ambiguous in meaning, referring to both a poison and a remedy. This article will argue that Internet technology, like writing in Plato’s era, is a kind of pharmakon, simultaneously presenting promise and challenges.

Focusing on the crucial, yet often invisible, role that technological mediation plays in online language use, the article will outline both the significant benefits and the potential pitfalls that computer mediation presents for the learning of languages and cultures. The global argument will be that the dynamics of online language learning call for an enhanced pedagogical focus on how medium and context interact with language use—what I will call a relational pedagogy. The goal of such an approach is to expose students to a broader scope of symbolic inquiry, to connect present text-making practices with those of the past, and to foster a critical perspective that will prepare them to understand and shape future language and literacy practices.

THE MEDIUM MATTERS

As Johnstone (2008) reminds us, all discourse is mediated in some way, and the ways it is mediated can influence its form (length, style, syntactic complexity, degree of cohesion, etc.), its usability (some things are easier to recall or interpret when they are presented in one medium versus another), and its content (what is appropriate to express in one medium may not be appropriate in another). In electronic environments, discourse takes on additional layers of mediation, often without our conscious awareness. Liddicoat (2011), for example, analyzes conversational openings and closings in videoconferencing sessions, showing how they must be accomplished doubly—once in a social interactional layer of operations and again in a technological layer of operations—and how these layers sometimes create dislocations. Liddicoat underscores the importance of examining how participants orient to and engage with the technological layer of operations as they construct, understand, and enact their social interaction.

Etymologically, the verb mediate has to do with being in the middle. It can mean merely occupying the space between two things, or it can imply agency, as when a person acts as a mediator to bring about agreement or reconciliation. When its subject is inanimate, it has to do with bringing about some kind of result, such as a reaction or a mental process. Interestingly, an older use of the verb is to divide in two, to reify separation. All of these senses, from the inert to the agentive, from the reconciliatory to the divisive, are relevant to the ways that communication is mediated in online environments.
In human communication, what is ‘in the middle’ is usually some form of language—materialized as speech, writing, signing, or some combination thereof. Then there are para-verbal phenomena such as facial expressions, eye movements, laughter, sighing, gestures, postures, and other body language. In technology-mediated communication, that language and body language is in turn mediated materially by some kind of device and its interface. Some people see their devices and interfaces as neutral conduits—merely occupying space between themselves and their interlocutors (the ‘inert definition of mediation). In reality, however, the hardware and the software we use filters and transforms what gets included in the signals transmitted between ourselves and our conversational partners. When we read and write, our language interacts with the cultural technologies of paper, books, computers, or smartphones. Each of these has its own particular human–material interface that must be mastered. How well one knows how to manipulate these interfaces makes a difference in how communication unfolds, and the technologies themselves impose their own constraints that can produce misunderstandings (i.e., the ‘dividing’ definition of mediation). Technology also divides when people from different social classes, from developed versus developing countries, and from different language groups have unequal access to technological resources—and unequal access to the social practices associated with using computers creatively and effectively, what Jenkins et al. (2009) call the participation gap.

Mediation also has agency: When we communicate, we don’t always start with a kernel of pure meaning to be expressed and then look for an optimal medium through which to express it. Sometimes we start with the medium at hand and it gives us new ideas, shaping our expression on its own terms. In essence, we arrive at an ad hoc function and purpose by virtue of playing the medium like an instrument we are trying out. We see what the medium will do, where it will take us. This is mediation as producing a reaction or a mental process.

With respect to language and thought, mediation has been theorized from Vygotskian and cultural–historical perspectives, most notably by Michael Cole and James Wertsch (Cole, 1996; Cole & Wertsch, 1996; Wertsch, 1998, 2007). Three ideas from this work are particularly relevant to the present discussion: (a) Mediation does not just facilitate processes, it fundamentally transforms them; (b) No single form of mediation is adequate for all tasks; (c) The meanings of actions and contexts cannot be specified independently of one another (Cole & Wertsch, 1996).

The idea that mediation transforms processes implies that when we change mediums, we change how communication is enacted. For example, Wertsch (2002) argues that asynchronous forms of interactive written discourse such as email or online forums do not just transpose spoken conversation into a graphic medium, but are transformative, making possible “a new kind of monologism” (p. 106) that operates in an overall dialogic framework. As Wertsch describes it, the features of face-to-face spoken dialogue, with all its interruptions, overlaps, fragments, and reprises, give way to “a sequence of turns, each of which involves an extended, maximally explicit, fully developed, and uninterrupted utterance” (p. 108).

Freedom from the kinds of time constraints operative in face-to-face interaction therefore allows for extended, reflective commentary. It is not a question of making conversation more efficient or easier, but of introducing fundamental change—both communicative and cognitive—by allowing people to hold the floor as long as they wish.

Although email and online forums may be well suited to certain communicative purposes, they are poorly adapted to others. The idea that there is no universal medium adequate for all tasks may be obvious, but it is of key pedagogical importance, for when educators design tasks they also need to consider which of the various available mediums will be most compatible with the goals of those tasks. Shifting from an asynchronous to a synchronous (real time) form of interactive written discourse such as chat, for example, might well defeat the positive monologic affordances that Wertsch describes. Chat rooms encourage the maintenance of a continual active online presence, which means that turns must be relatively short and frequent; the time required to produce a long, monologic entry effectively removes the participant from the flow of conversation. Furthermore, by the time a long reflective message is posted it well may have lost its relevance, since the conversation will have moved on while the long message was being composed.

The third point, that the meanings of actions and contexts cannot be cleanly teased apart, is also pedagogically significant. What Wertsch describes favorably as a new monologism might also be construed negatively if the extended utterances in question remained strictly monologic and did not take into account the perspectives, needs, and desires of other participants. One can imagine, for example, cases in which students are assigned to
post remarks on a discussion forum but interpret the task narrowly, preparing and uploading their statement without responding in any way to what has already been written and not bothering to read others’ responses to their post. This would represent monologism as self-interested instrumentality, short-circuiting the intended exposure to alternative perspectives.

One critique of this line of theorization is that it is biased toward human agency (Shaffer & Clinton, 2006) and is not adequate to deal with the kinds of nonhuman agents that operate in online environments. The interactivity of human and nonhuman mediation is highlighted in actor–network theory (Callon, 1987; Latour, 2005), which acknowledges the capacity of both human and nonhuman actors to effect change in a given network of people, organizations, machines, and objects. Latour offers the example of puppets and puppeteers. Whereas the traditional view is that causality is one-way—puppeteers make their puppets do things by pulling on their strings—puppeteers say their puppets suggest things to them that they had never thought about having them do (as a particular medium might give ideas to a writer). In actor–network theory, each and every actor (human or nonhuman) is codependent on every other actor, and these interdependencies maintain stability and structure within the network. Shaffer and Clinton (2006) argue that in the context of new media technologies, both people and objects are mediators (as contrasted with the Vygotskian view whereby humans make use of cultural artifacts as mediators or tools of thought). That is, people do not use new technology objects so much as they interact with and through them. Shaffer and Clinton have coined the term toolforthoughts to emphasize the distribution of action and intelligence across human and nonhuman actors in networks. They argue that “tools are not distinct from thoughts; rather, the reciprocal relation between tool and thought exists in both. Every tool contains thoughts, and every thought contains tools. Neither exists without the other” (Shaffer & Clinton, 2006, p. 290).

Such a perspective is relevant to today’s globalization of information networks because the tools (or toolforthoughts) we use to manage and filter information are endowed with an important sense-making agency. Relevancy filtering, for example, influences what advertisements appear on our screens, what purchase recommendations iTunes or Amazon offer us, or what results search engines provide us. Vaughn and Zhang (2007), for example, point out that Internet searches are biased for national origin: If one is in the United States, one’s search for material originating in another country will nevertheless be more likely to include U.S.-based Web sites than if one were located in another country. Furthermore, unlike past technologies such as the printing press or the movie camera, the computer is symbolic from the ground up, from the level of binary code to assembly language to the words, sounds, or images we see on our screens. Representation (and self-representation) through symbolic transformation is therefore at the heart of computer mediated activity. As Johnson (1997) points out, the software interface that allows us to use computers is synthetic in two senses of the word: “It is a forgery of sorts, a fake landscape that passes for the real thing, and—perhaps most important—it is a form that works in the interest of synthesis, bringing disparate elements together into a cohesive whole” (p. 238). Language education in the 21st century must address these representational issues head on and acknowledge that language use is often transformed by the mediums in which it is used.

To take just one example, genre conventions can be contested by the characteristics of a new medium. Consider Burbules’s (2006) interrogation of the “discussion” genre in online environments:

Are we more likely to debate contentiously or criticize when we cannot see our partners in online dialogue; are we more or less likely to disclose personal confidences when we feel safe behind a certain level of distance and anonymity; are we more or less likely to trust our partners in conversation (…) ? The space of online communication, like any other, is not neutral and shapes the form and content of what is said or written within it: Dynamic and flexible as these channels are, they have specific features—such as synchrony or asynchrony—which privilege certain voices, perspectives, and ways of communicating. (p. 117)

It is precisely because of these “specific features” that neither electronically mediated communication nor the Internet can be treated as a single, global medium. Each particular use will bring into play a particular set of language forms and communicative practices that are adapted to the setting, the medium, and the task at hand. There is thus no uniform language of electronically mediated communication as might be suggested from Crystal’s (2006) use of the term Netspeak. Even the various media within the broad category of electronically mediated communication (i.e., email, chat, texting, etc.) cannot be unambiguously associated with particular genres—in fact
each of them can support multiple genres (and consequently if one expects a particular genre to correspond to a particular medium one may find oneself in a genre-based misunderstanding). This is why teachers must think carefully about how the tasks they design relate to the specific affordances of the various mediums through which the tasks could be accomplished.

However, lest learners think that communicative genres are just affected by medium, setting, and task, they need to be reminded that they are also shaped by broader cultural and historical forces. Hanna and de Nooy (2003, 2009) underscore this point in their case study of British and American learners of French who participated in an online forum at Le Monde. They show that the ease with which the learners enter into discussion with native speakers can be deceiving because the genre labeled “discussion” is not universal but varies across cultures. In the context of the Le Monde forum, for example, politeness and linguistic accuracy were much less important than a willingness to be socialized into, and to follow the online community’s discourse rules (which echoes Jenkins et al.’s [2009] emphasis on participation culture). In their analysis, Hanna and de Nooy show how technology, culture, and genre interact to make communicative competence a relative construct, shaped by the conditions and constraints of particular communicative contexts. This is one reason why Jenkins et al. (2009) underline the special importance of cultural competencies and social skills in the practice of new media literacies.

With this background, we will now consider how mediation operates in one particular medium of online communication that is being used with increasing frequency in the teaching of foreign languages: desktop videoconferencing.

THE CASE OF VIDEOCONFERENCING

In recent years, many language teachers have developed long distance collaborations involving two or more classrooms, usually in different countries. Often referred to as telecollaboration (Guth & Helm, 2010; Warschauer, 1996), these international partnerships generally place an emphasis on culture in language learning and use. While a good number of studies have found promising results regarding the viability of telecollaboration for providing motivating language practice and developing intercultural awareness, some studies show that intercultural contact does not necessarily lead to cultural understanding (Belz, 2002, 2003; Coleman, 1998; O’Dowd, 2003, 2006; Thorne, 2003; Ware, 2005). Language ability, linguistic style, academic context, and institutional culture are all factors that can affect learners’ negotiation of meaning and cultural understanding. Two of the most significant, yet not obvious, factors are directly related to mediation: medium and genre.

While email has traditionally been the preferred channel for telecollaboration, the availability of desktop videoconferencing programs such as Skype since the early 2000s has enticed increasing numbers of teachers to experiment with synchronous audiovisual exchanges. Where-as text-based exchanges are mediated by words, symbols, and their layout, desktop videoconferencing adds voice, gesture, gaze, movement, and images of a physical setting framed by a webcam. The affordances of combining audio, video, and text in online exchanges are explored in Develotte, Guichon, & Kern (2008), Jauregí & Bañados (2008), Kern (2008), and O’Dowd (2006). Desktop videoconferencing seems in many ways a quintessential technological support for providing communicative practice with speakers at a distance, since it is the closest approximation to face-to-face conversation. It is important, however, to recognize that various forms of technological mediation introduce important differences from face-to-face interaction that need to be planned for in pedagogical projects.

The examples presented in this section are derived from an ongoing research/pedagogy collaboration among colleagues at the University of California, Berkeley, the Université Lumière Lyon II, and the École Normale Supérieure–Lettres et Sciences Sociales de Lyon (ENS). Since 2007, the project has focused on various aspects of videoconferencing exchanges between French students at UC Berkeley and students preparing for a master’s degree in français langue étrangère at Lyon II and the ENS (Develotte et al., 2008; Develotte, Kern, & Lamy, 2011; Develotte & Mangenot, 2007; Develotte, Mangenot, & Zourou, 2005, 2007; Drissi, 2011; Guichon & McLornan, 2008; Guichon & Nikolaev, 2009; Malinowski, 2011; Malinowski & Kramsch, 2014; Nikolaev, 2012; Vincent, 2012). One focus of our research has been the role of the medium in online communication.

A brief description of the setting is as follows. For the first half of each 15-week spring semester, students in one section of intermediate-level French at Berkeley met one day out of five in a computer lab for their videoconferencing exchange with their Lyon “tutors.” Over the years, three software platforms have been used: MSN.
Material Mediational Features of Videoconferencing

Although, at first blush, videoconferencing gives the impression of immediacy, what gets included in the audiovisual signal transmitted from one conversational partner to another is filtered and transformed by both hardware and software. This can make a difference in how communication unfolds. Consider the communicative implications of the video and audio characteristics of the videoconferencing environment.

Video Mediation. Because the webcam is installed as a fixed part of the iMac, it cannot be easily repositioned, and participants have to remain relatively immobile if they are to be visible to their partners. Furthermore, partners sitting next to one another need to move close together in order to both be fully included in the webcam’s frame. In our exchanges, this has raised a question among students—when they work with pairs of French students, they wonder if partners are sitting so close because they are good friends, because all French people sit close together, or simply because of the webcam. The webcam thus introduces some ambiguity in the interpretation of physical proximity.

The webcam also exaggerates the effects of physical movement (see Figure 1). A short range view creates a sense of immediacy and intimacy, whereas a distance of even three feet makes one look distant. Parkinson and Lea (2011) have found that when people are interacting with people they don’t know well, they sometimes compensate for relatively intimate visual contact by talking about less personal topics in order to increase social distance. “Paradoxically,” they write, “one consequence may be that [videoconferencing] produces less intimacy than text-based or audio-only communication, because, in the latter cases, interactants may seek to increase rather than decrease the emotional relevance of the conversation itself when fewer alternative cues are available” (p. 103).

Perhaps the most significant limitation of webcams is that they can create the illusion of contact when in fact there is none. One instance in our data involved a pair of Berkeley students who launched a video during their videoconferencing session. As they viewed the video (which covered their Skype screen), their French tutors tried to engage them to no avail. The Berkeley students could not see their French partners (and could not hear them over the sound of the video), yet to the French it looked like the Berkeley students were looking at them normally, so they erroneously concluded there was a technical problem.  

Because of the fixed position of the webcam at the top of the screen, real eye contact does not exist online. When interlocutors look at each other, they appear to be looking downward. If they want to create the illusion of looking into their interlocutor’s eyes, they have to look downward at the webcam, but then paradoxically they cannot see their interlocutor at all. Figure 2 shows a French tutor asking a question, looking directly into the webcam to create an illusion of eye
contact, and then five seconds later looking at the Berkeley students as she listens to their response. Students adjust quickly to the gaze dynamics of videoconferencing—sometimes to the point that they claim they maintained frequent eye contact with their tutors (even though mutual eye contact is currently impossible).

Webcams mediate gestures as well. Our in-lab videos show that gestures are used extensively during videoconferencing exchanges, but when these occur outside the webcam’s field of view they are invisible to online partners. Gestures can be helpful to students not only in monitoring meanings but also in managing turns of speaking, as suggested in the following student journal entry:

I also found that “les tours de parole” [conversational turns] were harder to determine than I had imagined, especially if [tutor] P did not specifically address [partner] E or myself in asking questions. The facial expressions and hand gestures (and laughter) helped me figure out whether les énoncés [utterances] were being understood during the conversation.

Ironically, the closer a speaker is to the webcam (e.g., students leaning in toward the computer, signalling a high level of involvement), the less likely it is that their gestures will be captured by the webcam. On the other hand, the greater the distance from the webcam (suggestive of social distance in face-to-face interaction) the greater the likelihood that gestures will be picked up by the webcam. However, even if a gesture is captured within the webcam field of view, it can still sometimes be hidden from the interlocutor’s view behind the automatically overlaid monitor window in Skype (see Figure 3).

One benefit of having students view the recordings of their interactions was that they became more aware of their gestures and their visibility or invisibility. One student who had been gesturing with his left hand to avoid invading the space of his partner seated at his right, actually
began to gesture with his right hand once he realized that his gestures were occurring out-of-frame. This speaks to the point that videoconferencing, like any other technologically mediated form of communication, is not an innate ability or natural act, but is a skill that develops over time.

Expressing emotion is also very different online (Kappas & Krämer, 2011). When communicating via text, for example, certain written signs may be used to communicate friendliness, such as “:)” or “lol” or “ha ha.” In videoconferencing, perhaps as a way of compensating for the webcam’s limited visual field that often hides gestures and body language, people often heighten their facial expressiveness as they speak (Figure 4). The effect of such exaggeration is generally to create a sense of liveliness and to enhance rapport (Grahe & Bernieri, 1999).

On the other hand, the medium can also lead users to project images of themselves that they do not wish to convey (what Goffman, 1959, p. 2, described as “expressions given off”), as one student reflected in her journal:

When using video to communicate with people I don’t know very well, smiling at the computer screen didn’t feel very natural. The added time delay made the conversation feel awkward and, as I strained to listen, I would sometimes realize that I didn’t look too friendly. I would find myself forcing a quick smile across my tired “8 am” face.

Clearly, reading the face of the other, as it is mediated by a computer interface, can be fraught with potential ambiguities. The partiality of the
webcam’s representation of context is both problematic and interesting, because it leaves room for inferences by participants—inferences that are sometimes accurate, but sometimes erroneous, potentially leading to misunderstandings.

**Audio Mediation.** Hutchby (2001) describes the subtle sonic mediation of the telephone as “a slightly ‘transistorized’ sound of the other’s voice,” that signals “the artificial nature of our sense of co-presence” and creates “a new form of intimacy (…) in which the distance of the other is simultaneously obvious and yet easily ignored” (p. 85). In videoconferencing, however, it is not always so easily ignored. On Skype, speech can be garbled at moments, but there is no way to know if one’s own voice is garbled unless one’s partner says it is. The use of headphones and microphones can also have a distancing effect—distance not just from one’s interlocutors but also from oneself. Here is what one student wrote in his journal [translated from the original French]:

> As soon as I put on the headphones I feel different. I feel like my voice projects differently, and my accent in French becomes more salient. This makes me a bit uneasy and I begin to stutter.

This self-consciousness is reinforced by the videoconferencing interface that presents the student with an online image of himself. He continues:

> Other things I’ve noticed are that I move around too much and my eyes are not fixed on the computer. I have no idea why. I don’t think it’s because I’m nervous but maybe I’m not comfortable, I don’t know. Anyway, I think I should change that in the upcoming interactions because I imagine that it must bother N and G [his tutors in France]. Moving around so much when you’re facing your interlocutor could be interpreted as showing a lack of interest. Given that N is in one room and G in another country, distance complicates the interaction and adds to the feeling that the one who can’t stop moving is not there, that he’s not engaged.

It is interesting to note how this student enacts linguistically in his journal the very self-distance he experiences with the headset, by referring to himself in the third person (“the one who can’t stop moving,” “he’s not engaged”).

The fact that students were not working in isolation, but with their classmates in a lab, meant that voices could carry from one station to another. This was sometimes an annoying distraction, but it became a more significant issue when an utterance (or laughter) made in the context of one interaction was picked up through a neighboring student’s microphone and heard by the overseas partners, who could mistakenly assume the utterance was relevant to them.

Lag and desynchronization of the audio and video signals can also affect communication. Participants had the impression they were seeing their interlocutors directly, as if they were right in front of them, rather than viewing them, which implies an image produced in the past, as in a film. But in fact tiny delays are produced as the signal is compressed, delivered over thousands of miles, and decompressed. What is perceived, both audially and visually, has been produced in the past, however slightly. The effect this has is to introduce a slightly awkward rhythm to the interaction, making one feel like one is always just a tad behind the beat. At moments when the delays become more pronounced, students sometimes wondered whether the desynchronized smiles, gestures, or facial expressions they saw onscreen were in response to what they were saying at that moment or whether they corresponded to what they had said a moment earlier. Tutors sometimes attributed a transmission lag to students’ hesitation. These ambiguities, combined with dropped frames, which resulted from bandwidth limitations and produced a jerky appearance to body motions, sometimes presented real challenges to understanding.

**Mediation and Learning.** Fortunately, technological mediation also provides the material means to analyze, discuss, and learn from whatever misunderstandings are produced during interactions. When interactions are recorded, they afford students the opportunity to study their own performance and possibly to reinterpret words and actions as they unfold for a second time (Guth & Helm, 2012; Kinginger, 1998). One student described the experience of reviewing a recording of a videoconferencing session as follows:

> It was a lot less pressure. (…) It’s kind of like rereading a book that you’ve already read in terms of familiarity. You kind of know what’s coming up next, so the next time you catch more stuff. So I felt like I had a better clarity of what exactly happened in the conversation. I have more self-awareness in terms of what I said, I’ll be like, “oh, ok” I know what I was trying to say at that point in time, I can hear now what I did say, but I think now that I could have said it better this way. So it’s sort of similar to going back and editing an essay or anything like that, you’re re-
appraising your own work. And plus it’s nice to kind of pick up maybe on a few things you missed out on in that conversation because there’s so much to be learned in the course of those conversations, and you hate the fact that there’s only so much you can learn.

This student’s comments raise a number of key points. First, by virtue of no longer being in the heat of the communicative moment, he has more available cognitive space to attend to details and can perceive things that went unnoticed the first time around. Second, having directly experienced the event, he can anticipate moments of uncertainty or misunderstanding and pay special attention to these points. Third, the comparison of his memory of the interaction with the objective data of the video recording leads to a sense of greater self-awareness. Finally, likening the process to revising an essay, the student has an opportunity to self-assess and to think about alternative words or actions that could have been used, potentially enlarging his repertoire for future interactions.

What Does It Mean To Mediate the Foreign Through Familiar Media

An important question for language educators to consider is what implications there might be when Americans learn a foreign language and culture through the same familiar Skype window that they use to talk to their friends and families. Foreign implies distance and difference. Yet videoconferencing technology strives to efface signs of distance, separation, and remoteness. The risk is that the technology that defeats distance could also quash difference.

In our interviews with students, we ask them where it seems their interaction with the French is taking place. Some students say videoconferencing is like being transported to France. More often, students describe their interactions as happening in a personalized, but neutral space. Consider, for example, one sophomore’s response to a question about how he would describe where his exchange with his online French partner took place:

Jake: It put you, you felt like you were in your own little world, like just chatting you know.

Interviewer: So, where is that little world? Is it in Lyon? Is it in Berkeley? Is it somewhere in a virtual space?

Jake: It’s definitely neither here nor there because it’s not like I’m in Lyon experiencing what’s going on around her nor is she in Berkeley can she see everything that’s going on around me. (…) It’s kind of like having a telephone conversation with someone who’s in a place that you’ve never seen before. It’s lacking a little bit of context.

Paradoxically, there seems to be something about the visual dimension of videoconferencing that short-circuits students’ envisioning of place (and this speaks to a more general finding that text-only online communication is often richer, more engaging, and more productive than audiovisual communication, as argued by Walther [2011]). As the interview continued, Jake added that if he is talking on the telephone with someone who is in some far-flung location, he imagines what the other person’s surroundings are like, but with videoconferencing he doesn’t do that. Jake thinks about how he could actually go to Lyon and meet his tutor, but then, he realizes, it would be “kind of a weird shock, because you’re so used to just knowing her through this computer interaction.”

Another student expressed the computer mediation of her tutor in quite literal terms. She said, “I guess the tutor was in the screen, I never tried to picture her where she would actually be in reality. She was just in a room somewhere. She could’ve been down the hall, for all I knew. Because there wasn’t like a French feel or anything.”

All this creates a kind of Skype world where, as one student put it, “you don’t feel like you are in a class in Berkeley, you don’t feel like you’re in Lyon, you just feel like you’re talking to somebody, except in a different language than you’re used to.” That student’s Berkeley partner, who had never used Skype before, added: “I felt like they were close, definitely close, like but geographically just like in some room in their living room talking, but neither in France nor here. (…) It was somewhat strange for me in the beginning… because I was kinda unsure of where they are… but that was a consequence of the fact that I didn’t know Skype, but now it’s normal in that sense that it is Skype normal but it’s not like normal conversation.”

Several students talked about the computer as a “barrier,” but most often in the sense of a protection rather than an impediment to communication. One student, Grace, put it this way:

I feel like the computer is like a barrier you get to hide behind (…) it kind of helps create almost a… barrier… of like, realization and that like, it’s like,
yes, I can understand that these are real people on the other end and I’m actually talking to them and they exist in the world and they participate in it outside of this session. But it’s kind of also easier to kind of displace it and be like it’s okay, it doesn’t really matter [laughter] whereas in person it’s like yes, there’s an individual here and I just completely butchered that sentence. That sucks.

Grace’s choice of “displace” suggests that the computer allows her to participate in the moment, but with the leeway to readily shift frames from “here and now” to “then and there,” creating convenient distance between herself and her interlocutor as needed to maintain her comfort and self-confidence.

Another student, Karen, represented the computer barrier visually (Figure 5).

She described her drawing as follows:

Karen: I was trying to draw two people like at a café, but then with like giant computers in front of them, I don’t know, it sounds sort of like a barrier of communication.

Interviewer: The giant computers were the barrier?
Karen: Uh huh.
Interviewer: And why did you choose a café?
Karen: Because I did think that talking to the tutors, while it was professional, it was slightly less formal than a classroom setting.
Interviewer: So it felt it was a little like sitting around a table at a café?
Karen: Yeah, and just talking.

Of note in Karen’s drawing is that both figures are physically co-present, seated at the same table, suggesting the feeling of shared space. Yet the two people are focused on the computers, which are physically touching one another (indeed they almost seem as though they are joined at the base) and which block a direct line of sight between the two people. In the drawing, Karen is much more clearly delineated than her tutor.

In keeping with her awareness of the computer mediation, Karen likened her impression of Lyon to that created by a travel agency—because of the images and videos that her tutor had showed her. “It was very picturesque . . . y’know, any city can look like that. San Francisco can look like that, but it doesn’t. So I’m not sure that I actually really know what it means to live there in Lyon.”

Another student, asked about how she envisioned Lyon, focused on her assumption that it was similar to the United States, based on people’s common humanity—with language being the one significant distinction:

If [we] go to Lyon, I think it, you know, there’s the usual sights to see, people are people, and it’s not like, you know, the stereotypes, you know, they’re people, and so I figure it’s the same, everybody’s got their passions, everybody’s, you know, who they are, and so . . . I imagine it being like here, just speaking French, you know, instead of English.

Such comments suggest that for some students, envisioning the Other was difficult and that the technological mediation might have contributed to a flattened sense of difference. However, it is important to point out that there were many de-homogenizing moments as well in these exchanges. The following student testimony illustrates how when the French tutors talked about how they imagined the United States, the striking foreignness of their comments led the Berkeley students to reflect about stereotypes:

We thought it was very funny when we were talking about New York, and they, for some reason thought that every single American has been to New York City. And I’m like, “I haven’t been to New York, and he hasn’t been to New York.” And they were really surprised. They were like, “You’ve never been to New York!?” and so that was a large touch of, kind of just . . . humanness there, because we were . . . like . . . I suppose, used to thinking that all French people would do such and such but you know . . . go to Paris or something or go to a certain place or do a certain thing but they don’t. And then we all, of course, don’t go New York City. But then it was kind of interesting, you know . . . things like that build up and we could relate more closely.

What this and many of the previous student comments suggest is that many students saw their
tutors simply as individuals, rather than as imagined representatives of France. Such comments highlight the ambiguous role of cultural authenticity in such exchanges. A number of students had nonnative French tutors, and in most cases this was not a significant issue for them—they were very happy to be communicating with a highly proficient speaker living in France. Nevertheless, whether tutors were native or nonnative, their physical presence in France at the time of communication was a meaningful criterion for many students. As one student reported: “I feel like sometimes I would transport myself there, like, Whoa, he’s actually in France, talking to us in French, he’s a native French speaker.” When asked what it would be like if we arranged face-to-face exchanges with native speakers of French in Berkeley, the student continued, “if it was here it would be like, Oh you have the same weather, or whatever we would talk about, or he would know a lot of the movies or the culture that we have, so we wouldn’t be able to talk as much about it and interact.” In the 2011–2012 year, students in the study had a visiting native French speaker as their instructor at Berkeley, and a number of students commented that while this was wonderful, their communication with their French tutors often felt more real in two respects: First, their tutors were physically on site in France, and second, they knew their classroom instructor was evaluating their language performance, which imposed a very different dynamic.

We are left with a somewhat contradictory picture, with some students highlighting how the computer interface decontextualizes their French tutors, stripping them of a “French feel,” while other students highlight the significance of their tutors’ physical presence in France and their cultural difference. This contradiction raises an important question for language educators: Is the ultimate goal of such online exchanges to connect learners with individuals who happen to speak the language, regardless of where they are and where they are from? Or is it rather to connect them with individuals as representatives of a foreign culture or multiple foreign cultures? Globalization, characterized by physical mobility, mobile resources, cultural flows, erased national boundaries, and hybrid cultural identities, might seem to pull us in that direction. The problem is, what a cultural representative meant in the 1980s is quite different from what it means in today’s globalized world, where language, place, and community can no longer be assumed to go together. What is needed is a new model for online exchanges that synthesizes and transcends these stated goals. Instead of thinking of computer mediation either as simply a way of providing our students with more language practice, or as a virtual portal through which to explore the foreign cultural milieu that exists beyond the computer interface, we need to think of computer-mediated exchanges as what Pratt (1991) calls contact zones: “social spaces where cultures meet, clash, and grapple with each other” (p. 34). The cultures in contact will include of course the various cultural affiliations of each of the participants, but they will also include the culture (i.e., the affordances, embedded values, and limitations) of the mediational interface that makes the contact possible.

To summarize, we’ve seen how videoconferencing exchanges emphasize human-to-human contact and how students can benefit from real time interaction with foreign peers online. At the same time, we have seen how the computer interface can introduce distortions in those interactions and in some cases potentially induce a sense of geographic and cultural neutralization. What is deemed by students to be ‘real’ or ‘authentic’ is also problematized: Which is more real, the technologically mediated interaction with its distortions of image and sound, or the here-and-now, face-to-face interaction with the distortions introduced by the pedagogical interface?

It is important to point out that these issues extend well beyond telecollaborative exchanges to other kinds of technological mediation. In virtual environments like Second Life or in online role playing games like World of Warcraft, for example, learners are immersed in language (Thorne, 2008; Thorne, Fischer, & Lu, 2012), but instead of being immersed in the foreign language culture, they are immersed in global game cultures, whose rules are created jointly by software designers and players. Although game servers are distinctive and often formed by language specific guilds, the simulational, fantasy dimension of the online environment is often so salient it seems likely to overpower traces of the participants’ home cultures. Stand alone video
games that are marketed globally are often culturally translated to filter images and narratives to match the perceived differences in regional markets (Carlson & Corliss, 2011). Even when these translations aim to accentuate cultural foreignness, they “sacrifice much of the style, rhythm, and poetics of the source material and risk exoticking and thereby drawing disproportionate attention to what may have been intended as mundane, routine, or otherwise innocuous details” (Carlson & Corliss, 2011, p. 73). In Second Life, Liou (2012) describes a Taiwanese EFL learner’s avatar named “Denny” that emulates a globalized mass media star image that could belong to any culture. Indeed, in the case of Second Life, people often go there to escape their day to day reality and to create their own culture (but doing so with the resources commodified by Linden Lab, the owner of Second Life). This is not to say that language learners should avoid online games—indeed, they can undoubtedly learn a great deal about how cultures are generated, mediated, and modified in microcosm. But they (and their teachers) should be careful to acknowledge that microcosm for what it is (a potentially useful metaphor with which to think about foreign cultures) and not confuse it with the foreign cultures themselves.

As alluded to earlier, an even subtler issue has to do with the Web browsers, RSS feeds, Web crawlers, and indexing routines we use to get information about foreign cultures. These technologies increasingly incorporate relevance filtering algorithms that custom tailor our results to our past online behavior. Every time we order a book on Amazon.com, for example, we get recommendations of other books Amazon thinks we might like, based on our previous searches and purchases. Companies like Axiom, Datalogix, and TargusInfo collect personal data about us that they sell to other companies so they can tailor the information they deliver to us, and the activities they support” (Jenkins et al., 2009, p. 7).

Language educators stand at a critical juncture, faced with the need to rethink the relationship between technology and language learning. As alluded to earlier, one suggestion is that instead of thinking in terms of using technology to make learning more efficient, or more motivating, or more inclusive, or more culturally authentic, we ought to consider ways to use technology to study the very ways it mediates language use, communication, cultural expression, and social meaning. That is, to adopt an approach that focuses on the very mediations that are part and parcel of all our

**TOWARD A RELATIONAL PEDAGOGY**

Today it is not a question of whether to use technology or not in FL education. More and more of our daily activity and communication takes place online, and in the course of a day it has become commonplace to interact with people in distant locations using multiple languages. Our students will be called upon to use their languages in technology-mediated environments, and we need to prepare them with a critical awareness of how mediations affect meanings. As Kramsch (2009) has suggested, “the more real-world communication takes place in the virtual world of networked computers, the more crucial it becomes for instructional environments not to emulate the computer, but to offer precisely what the computer cannot do, namely, reflect critically on its own symbolic and virtual realities” (p. 194).

Such analysis is acutely needed because global- ization and networking technologies have altered the dynamics of cultural production. Instead of the creative production of a few being disseminated to masses of consumers (as in the mediums of print, radio, and film), new media have enabled the masses to participate widely in both the creation and dissemination of media. In order to participate fully and effectively in this new cultural and economic context, however, young people must be able to think about “the interrelationship among different communication technologies, the cultural communities that grow up around them, and the activities they support” (Jenkins et al., 2009, p. 7).

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communicative acts, and especially those that happen online, where our interpretations are significantly influenced by multiple layers of mediation.

What is needed is a pedagogy that explores how all mediums (not just those that are computer-based) contribute to the design of communication and embody values and fundamental ideas about what communication is. For this, language learners need not only grammar and vocabulary, but also a set of heuristics that will help them develop a disposition for paying critical attention to relations among forms, contexts, meanings, and ideologies. Such heuristics might focus students’ attention on questions such as these with respect to any given communicative act:

1. How do linguistic elements interact with nonlinguistic elements to produce particular meanings?
2. How have conventional semiotic resources been appropriated, adapted, or recontextualized for individual or collective purposes?
3. How are time (e.g., rhythm, timing) and space (e.g., visual layout, movement) used to create particular meanings or effects?
4. More broadly, how do aesthetic qualities contribute to meaning and credibility?
5. How are traces of the communicator’s identity or persona signified, and are these traces “expressions given” or “expressions given off” (Goffman, 1959, p. 2)?
6. Whose interests are at stake, and how are those interests identifiable?

Call it discourse studies, rhetoric, or literacy, a relational pedagogy adopts an ecological model in that it takes relations rather than things as primary units of analysis. It connects what people do with computers to what people do with other technology-mediated forms of expression such as writing, photography, and film. It shows students how to look both at and through mediational interfaces (Lanham, 1993) to sensitize them to how these logics affect meaning and social action. It focuses attention on subtle interactions between medium, genre, register, and culture so that students can be prevented from jumping to facile conclusions about the way others think, feel, or express themselves that are based on surface language forms alone. It thus exposes students to a much broader scope of inquiry than something like electronic literacy. It connects students to past as well as present practices, giving them perspectives that will prepare them not only to engage critically with today’s media but also to help shape the language and literacy practices that will develop with new technologies of the future.

Models for such an agenda have existed for some time. The New London Group developed a wide ranging manifesto they called a “Pedagogy of Multiliteracies” in 1996, which was updated by Cope and Kalantzis (2009). In foreign language education, the concept of multiliteracies has been adapted by Byrnes (2005), Byrnes, Maxim, and Norris (2010), Kern (2000), Kern and Schultz (2005), and Swaffar and Arens (2005), among others.

For two semesters I have experimented with this kind of approach in the aforementioned “French for Future Teachers of the Language” course. My students pair up with students from the ENS–Lyon who are taking a similar course taught by Professor Christine Develotte. For one hour each week, they interact online to discuss topics we have synchronized in our respective courses. Their interactions are recorded and are saved online in what is called la salle de rétrospection—accessible to both the Berkeley students and the Lyon students. We have staged their interactions in a progressive sequence of different media, starting with forum discussions, then email, then chat sessions, followed by desktop videoconferencing using two distinct platforms (VISU and Skype). Students reflect on how language use relates to the characteristics of each material interface, and how social needs relate to the various technological mediums. They then get to share and discuss their perspectives with their foreign peers. Here’s a sampling of some of the questions the Berkeley students have asked their partners in France: Do you think the way French and English change across technological modalities is unique to each language, or are there changes in common? Do you feel that Facebook and texting have expanded (or limited) the content of our conversations? If so, how and why? What subjects do we typically not raise when using these particular means of communication? Are these the same topics as those that are not raised when talking to someone in-person? Has the prevalent use of English on the Internet influenced your attitudes toward English as a language? If so, how?

In his recent book, Communication Power, sociologist Manuel Castells (2009) argues that the common culture of our global network society is not based on shared values, but rather on “the sharing of the value of communication” (p. 38).
The new protocols of communication, Castells says, reverse people’s “historical dependence on the media during the mass communication era” (p. 126) and provide the resources for new agency in effecting cultural change. For our students to be fully prepared for this kind of agency, the language education we provide must confront them with language not just as a normative system but also as an adaptive practice that interacts with its cultural and technological mediations.

CONCLUSION

Like writing in Plato’s era, Internet technology today can be viewed as a pharmakon, presenting both a promise and a challenge, contributing to art in both its positive and negative senses: the creation of beautiful things, and accomplishment by deceitful or artificial means. We have seen that technology is far from a panacea, for although it can provide contact with people around the world, it does nothing to ensure successful communication with them, and some of its particular mediational qualities may in fact work against intercultural understanding. As Hanna and de Nooy (2009) point out, “Far from the utopia of the borderless world, the Internet offers easy opportunities for fortifying frontiers, for reinforcing stereotypes, for galvanizing racist hostility. This is particularly true of online discussion (…) with its rapid, largely anonymous exchanges, its capacity for faceless interaction between strangers without means of redress (…) and the dominance of an adversarial communicative style in postings” (p. 137). Although the Internet is touted as being open and democratic, providing a neutral medium for interchange, as Morozov (2011) points out, “All too often the design of technologies simply conceals the ideologies and political agendas of their creators” (p. 298).

On the other hand, technology-mediated communication offers many important advantages. It provides students ample opportunity for negotiation of meaning and the development of pragmatic competence in the medium they are most likely to make use of after their academic studies. It exposes learners to many different genres and registers, and especially to the language of young people, which was formerly very hard to access unless one spent time abroad, precisely because it was not authorized language. It provides new opportunities for creative use of symbolic forms, in language play, digital storytelling, and other forms of multimodal expression. Because it often takes written form, it gives students the opportunity to attend to details of form and content both during interpersonal communication and afterwards, thereby lending itself to close analysis of difficult structures, communication strategies, and cultural misunderstandings. Synchronous forms of communication that can be recorded allow students to retrospectively listen, view, or read their interactions to identify strengths and weaknesses and to analyze lapses of understanding.

Globalization and networked technologies have created the conditions for ever more explicit confrontation of discourse worlds. The problem with the Internet is not only that it filters and transforms information, but also that it makes it difficult to fully contextualize meanings—and this is particularly relevant in the case of foreign language learning. Engaged in the moment-to-moment decisions involved in communication and interpretation, and having only a very partial (or sometimes distorted) sense of context, students can easily lose sight of the foreignness in the words, gestures, notions, and practices of their interlocutors, and also fail to see themselves as foreign in relation to them.

However, the poison just might also be the remedy in this case. By making it possible to textualize and recontextualize language use, technology holds the potential to defamiliarize the familiar, to itself induce a certain foreignness that can cause language learners to de-automatize their perceptions, leading them to new insights and understandings.

NOTES

1 In a few cases, the ‘Lyon’ tutors were not physically in Lyon, but engaged in internships in various parts of the world.
2 Full methodological details can be found in Develotte et al. (2008) and Malinowski (2011).
3 See Develotte et al., (2008) for full details about these findings. Language acquisition is not a dependent variable in our research, since it is impossible to reliably separate what students learn in class (four days a week) from what they learn during videoconferencing sessions (one day a week).
4 Skype has since rectified this problem by creating a ‘floating’ window that shifts position and remains visible when other applications are opened.

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