CALL IN THE YEAR 2000:
STILL DEVELOPING THE RESEARCH AGENDA

A commentary on Carol Chapelle's CALL in the Year 2000: Still in search of research paradigms. *Langauge Learning & Technology,* Vol. 1, No. 1.

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In this commentary I would like to address several aspects of the proposal for a research agenda for CALL advanced by Chapelle (1997). The explicit aim of Chapelle's article is the identification of "key questions about CALL" as well as "effective research methods to be used to answer them" (p. 19). Chapelle raises a number of interesting points that will prove helpful for the design of future studies. I believe, however, that some points of her argument deserve greater emphasis whereas others could benefit from a more comprehensive analysis. The five areas of improvement identified in this commentary are (a) the literature review on research perspectives of classroom discourse needs to be further expanded, (b) research domains other than discourse analysis may also be relevant for the analysis of the pedagogical effectiveness of CALL, (c) the theoretical analysis of the psycholinguistic process of L2 development needs to be specified in further detail, (d) the analysis of electronic and face-to-face communication does not take into account relevant differences brought about by distinct communication media, and (e) the relative importance of computer mediated communication (CMC) in the proposed research agenda appears to deserve greater emphasis given the current level of interactivity achieved by various communication media.

Chapelle points out that CALL practice draws on cross-disciplinary work and argues further that research from a number of areas such as computational linguistics, instructional design, communicative language theory, and psychology "fall short of providing the concrete principles needed to investigate CALL for instructed SLA" (p. 21). As a consequence, Chapelle states that "what is needed. . .is a perspective on CALL which provides appropriate empirical research methods for investigating the critical questions about how CALL can be used to improve instructed SLA" (p. 21). For this purpose, Chapelle focuses on the findings from research studies documenting language input and interaction in classroom instruction (*interactionist* approach) as well as the "research methods and assumptions they rest on" (p. 21). While I do not wish to deny the importance of the specific perspectives on classroom discourse explicitly described by Chapelle, I believe that Chapelle's review of the background literature is limited. For instance, the recent appearance of a substantial number of theoretical and empirical studies on the analysis of L2 classroom interaction from the perspective of sociocultural theory has not been incorporated to Chapelle's analysis (e.g., Brooks & Donato, 1994; Hall, 1993; Lantolf & Appel, 1994; McCafferty, 1992; Swain & Lapkin, 1995).

The apparent lack of reference to sociocultural approaches in Chapelle's article is highly relevant for two main reasons. First, given that sociocultural theory emphasizes the role of individuals' interests and motivation (e.g., concept of self- versus object-regulation) as well as the role of inherently educational goals (e.g., concept of Zone of Proximal Development), it represents a new perspective that provides a contrast with strictly information-processing approaches. Second, some researchers have specifically addressed the challenges brought about by new technologies for educational purposes--such as CALL-- from a strictly sociocultural perspective (e.g., Crook, 1994, Warschauer, 1997; and more recently, van Lier, 1999, and Wegerif & Scrimshaw, 1997). Such analysis appears to be inherently relevant for the assessment of the future research agenda outlined by Chapelle.

Another way in which Chapelle's proposal may be strengthened is by expanding the scope of her proposed hierarchy of relevant areas of inquiry (research domains) for CALL studies. In this respect, the recommended "shift from general approaches such as those of psychology, computational linguistics, and educational technology to specific questions and methods of researchers who investigate instructed SLA" is not necessarily justified by Chapelles analysis (p. 28). For instance, the example of the pedagogical activity implemented with the German program *Kommissar* appears to be related to concerns inherently tied to the area of computational linguistics as much as they are to concerns from instructed SLA. The program *Kommissar* is ideally based on the use of natural language parsers that analyze learners' queries and provide appropriate sociolinguistic responses that allow for the mimicking of real human interaction. The limitations of language parsers to mimick human discourse--extensively discussed elsewhere (Holland, Kaplan, & Sams, 1995; Murray, 1991; Pinker, 1979; Weizenbaum, 1976)--highlight a research area where technological sophistication is actually behind what L2 teachers would like to accomplish. This limitation stands in contrast with other technological advances that, as correctly argued by Chapelle, "have expanded far beyond prior expectations" (p. 28).

It is important to mention, however, that Chapelle introduces one caveat that qualifies her position: "these questions and methods are fundamental for choosing classroom activities, but they are, of course, *not the only questions that one might pose about CALL use nor the only informative approach to research* [italics added]" (p. 28). Among the alternative questions regarded by Chapelle as relevant for the development of a research agenda in CALL studies are the analysis of specific linguistic points, the role of metacognitive strategies, and the quality of cross-cultural experiences. Given the importance of such research questions especially for instructed SLA environments, their analysis should be further expanded in order to provide a more comprehensive framework for the development of a valid research agenda (i.e., in search of research paradigms).

Another potential concern about the research objectives identified by Chapelle is related to the apparent absence of a comprehensive theoretical analysis of the process of L2 development. For instance, Chapelle states that "what was not very well understood years ago. . .is the importance of learners' attention to form *periodically* [italics added] while they are working toward a communicative task goal" (p. 27). She further argues that CALL activities can focus learners' attention on form through the use of hypertext links or error signals and claims that "the effectiveness of these features needs to be investigated empirically" (p. 28). The analysis of a loosely defined interplay between a focus on form and a focus on meaning, however, may be insufficient for the development of a systematic research agenda. Notice that it is not clear in the above-mentioned analysis how the principle of "periodic attention to form" could be implemented (i.e., lack of specification of theoretical constructs). In this respect, previous studies have explicitly identified various ways of addressing the interplay of attention to form and attention to meaning from a variety of clearly articulated theoretical approaches such as comprehension-based activities (Ellis, 1993), task-based instruction (Foster & Skehan, 1996), structure-based communicative tasks (Loschky & Bley-Vroman, 1993), input processing (VanPatten & Cadierno, 1993), incidental attention to form (Long, 1991), and so forth. The analysis of the relative importance of the above-mentioned theoretical and empirical studies needs to be fully addressed in order to outline the goals of a research agenda for the analysis of attention to form and attention to meaning in CALL studies.

Another major concern relates to Chapelle's analysis of the psycholinguistic process that underlies second language acquisition. For instance, Chapelle states, "interactional modifications initiated by the learner on input from the computer *should yield similar psycholinguistic effects* [italics added] as those in oral face-to-face linguistic exchanges in which they were first investigated" (p. 27). Such an assumption, however, cannot be taken for granted, as there is little research that shows that human-computer and human-human interaction "yield similar psycholinguistic effects." In fact, previous research such as that on human versus machine feedback points in the opposite direction (Bloom, 1984; and Anderson, 1990: 455-9 for a general overview). As a consequence, the appropriate distinction between computer-human and human-

human interaction should be further analyzed. Another unwarranted assumption is related to the analysis of non-linguistic communication in CALL activities as opposed to face-to-face communication: "Unlike L2 classroom tasks many CALL tasks are intended to rely on forms of communication other than the target language (e.g., icons and mouse clicks) to accomplish the target goal" (p. 24). Face-to-face interaction, however, may be considered to be equally if not more constrained than electronic communication by non-linguistic forms of interaction (e.g., Clark & Brennan, 1991; Salaberry, 1996, in press). In essence, some a-priori assumptions would be better regarded as research objectives to be thoroughly investigated as part of the proposed research agenda for the year 2000 and beyond. Finally, as a corollary to the previous argument, it appears that the role of CMC should be regarded as one of the important domains of research to be addressed in future studies. Chapelle's strong argument for the role of learner-centered instruction leads her to conclude, "the pedagogical goal of CALL activities is for learners to improve their ability in the target language through participating in linguistic interactions" (p. 23). Chapelle's proposal, however, pays attention mostly to CALL activities representative of machine-human interaction as opposed to human-human interaction implemented in CMC activities (see also Chapelle, 1998). In fact, the example about the Portuguese class (the most representative of a CMC-based activity) was not comprehensively analyzed to show how features inherent to CMC environments may provide a strong foundation for future studies in CALL. In this respect, some recent theoretical studies (e.g., Warschauer, 1997) as well as empirical ones (e.g., Beauvois, 1992; Kern, 1995) appear to be highly relevant for the purpose of outlining a future research agenda for CALL-based studies and should be considered in further detail.

In effect, the development of a valid research proposal for CALL should be attentive to important principled distinctions incorporated into various theoretical frameworks. For instance, the conceptualization of CALL systems as tools or tutors (e.g., Higgins, 1988; Levy, 1997), or alternatively, as open or closed systems (Crook, 1994; Wegerif & Scrimshaw, 1997), provides a principled foundation for the design, use and assessment of CALL software. Such contrasts are relevant for the development of a research agenda for CALL because, as Levy argues, "evaluation studies to date have shown a tendency to view CALL materials as tutorial in nature" (p. 203). In contrast, when computers are conceptualized as tools, the focus is on "how well the tool helps the user accomplish the task, not how well the computer can teach" (p. 204). In this regard, the analysis of computer mediated communication, including the analysis of learners' use of technical components that render CMC possible, deserves to be at the forefront of future research agendas**.**

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