

Negotiating meaningfulness

An enhanced perspective on interaction in computer-mediated foreign language learning environments

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Research in second language acquisition (SLA) in computer-mediated interaction using an interactionist framework finds negotiation for meaning (NfM) to occur in native speaker (NS) and non-native speaker (NNS) and in NNS-NNS synchronous electronic exchange (chat). Research in foreign language learning (FLL) in telecollaborative environments using socio-cognitive frameworks finds development of communicative and intercultural competence to occur in chat as well. To the end of exploring the complementarities of the two approaches, after reviews of relevant literature, this chapter conducts analyses on the same data produced by two dyads in Telekorp, the Telecollaborative Corpus of German and English. First, NfM sequences found in two chats are analyzed using an expanded NfM taxonomy. In the very few NfM sequences found to occur, self-noticing and use of task-appropriate responses are observed, implicating the affordances provided by the computer-mediated environment. The data are then re-analyzed using a socio-cognitive framework, which allows for the consideration of negotiation of face and solidarity, that is, interpersonal meaningfulness from the participant's perspective. In this way, socio-cognitive interpretation is shown to enhance, rather than contradict, an NfM analysis, a stance supported by an ecological heuristic.

As foreign language educators around the world use computer-mediated communication (CMC) tools in their classrooms, researchers relate that practice to theories of second language acquisition and development (SLA)¹ by using a variety of

1. For the sake of simplicity, the term SLA will be used to refer to the processes of second/foreign/other language acquisition/development/learning. See also Block (2003).

contemporaneous frameworks and approaches to analyze CMC discourse. This diversity in approach may result from the interdisciplinary origins and natures of the concerned players and the history of technology vis-à-vis second language (L2) learning (Lam & Kramersch 2003). CMC has roots in computer science and communication studies, whereas studies in SLA and in foreign language learning (FLL) have roots in cognitive science and applied linguistics. These scattered origins and their resultant epistemological and ontological commitments and debates are reflected in the evolving discussion over the use of CMC in FLL and application of SLA theory to the field (Atkinson 2002; Chapelle 1997; Harrington & Levy 2001; Kern, Ware, & Warschauer 2004; Ortega 1997; Salaberry 1999; Thorne & Payne 2005).

Taking an experimental, quantitative approach, researchers informed by the interaction hypothesis (Long 1996) have sought evidence of negotiation for meaning (NfM) in native speaker (NS)-non-native speaker (NNS) and NNS-NNS² chat (Blake 2000; Blake & Zyzik 2003; Kötter 2003; Lee 2001; Pelletieri 2000; Smith 2003; Sotillo 2005; Toyoda & Harrison 2002; Tudini 2003; see Abrams 2006 for a recent overview). NfM is seen to “facilitate acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways” (Long 1996: 451–452). Similarly, utilizing a variety of commensurable theories, researchers informed by a socio-cognitive perspective (Atkinson 2002; Belz 2002a; Kern & Warschauer 2000) have adopted a more qualitative approach, exploring the development of communicative competence in cross-cultural tele-collaborative learning environments (Belz 2002a; Belz & Kinginger 2002; Belz & Kinginger 2003; Belz 2006; Furstenberg, Levet, English, & Maillet 2001; Hanna & deNooy 2003; Kern 1998; Kinginger 2000; Kramersch & Thorne 2002; Lee 2004; O’Dowd 2003; see Lomicka 2006 for a recent overview).

By using heuristics from both approaches to analyze the same CMC interactions, I argue for the complementarities of the two perspectives as applied to interaction in computer-mediated language learning environments. Although comparing the two approaches has been likened to comparing apples and oranges (Gass 1998), the two are not entirely incompatible from an ecological viewpoint (van Lier 2004: 142). As an NfM analysis makes explicit, the role of transactional or ideational meaning, a socio-cognitive interpretation of the interaction illuminates the role of interpersonal meaningfulness from the participant’s perspective. The purpose of this dual approach is to offer insight into the relationship between research epistemology and pedagogy, thereby informing the future design of classroom-based computer-mediated language learning environments.

2. These terms are also not without controversy, but are used in this context again for the sake of simplicity. See Firth and Wagner (1997).

To this end, I first present a review of studies on FLL in CMC that use negotiation analytical frameworks, followed by a detailed analysis using of two NfM sequences in two chats produced by two pairs of students, two Americans and two Germans engaged in a telecollaborative partnership (Belz & Kinginger 2002; Warschauer 1997). This analysis is followed by a review of studies on FLL in CMC-based intercultural exchange that use a socio-cognitive approach, followed by a reinterpretation of the NfM analysis using a socio-cognitive approach. The chapter concludes with a discussion of issues made relevant by the analyses.

Negotiation for meaning in CMC environments

Following the application of computer-mediated classroom discussion in foreign language classrooms (Chun 1994; Kern 1995), interactionist studies looking at NfM in CMC environments have proliferated, and a number have found several common themes. Several studies sought to prove the existence of NfM in chat and to relate it to classroom task type for instructed SLA (e.g. Pellettieri 2000; Blake 2000). Some have focused on the role of NS interlocutors and to what extent their presence promotes NfM, and many have noted the tendency for expanded reaction routines in chat exchanges (e.g. Smith 2003). Although most have used Varonis and Gass' (1985) four-stage NfM model (trigger → indicator → response → reaction to response), some have expanded it (e.g. Smith 2003), while others have proposed and applied new taxonomies and frameworks (e.g. Toyoda & Harrison 2002).

Several studies have looked to prove that NfM occurs in chat and to examine the influence of task type on these occurrences. For example, Pellettieri (2000) considered the development of grammatical competence of L2 Spanish learners in chat environments. By applying Varonis and Gass' (1985) model to chat transcripts of students completing a variety of tasks to promote form-focused interaction and modified output, she found that NfM does, in fact, occur. Pellettieri emphasizes that task design is crucial, finding that jigsaw-type tasks work best for creating communication breakdown that, in turn, requires that negotiation be repaired. Blake (2000) also found that NfM took place in the CMC chats of fifty L2 Spanish learners, especially during jigsaw-type tasks, although negotiations were more lexical than syntactic in nature. Like Blake, Smith (2003) employed Varonis and Gass' model to study the CMC interactions of 28 ESL learners in order to determine the extent to which computer-mediated NfM resembles face-to-face NfM. He found that negotiation occurred about one third of the time. Decision-making tasks resulted in a greater number of negotiations than jigsaw tasks, contrary to the findings of Pica, Kanagy, and Falodun (1993), until adjusted

for target versus incidental lexical items, in which case jigsaw tasks elicit more incidental NfM. Finally, Blake and Zyzik (2003) found NfM in heritage speaker-NNS chat dyads, who completed a two-sided jigsaw task in an anonymous chat. The transcripts were then analyzed using Varonis and Gass' model, as well as for instances of output that indicated noticing. Thirty negotiation events were identified: 24 lexical, 4 grammatical, and 2 pragmatic confusions, and three-quarters of those events were resolved by the heritage speaker partners.

Including Blake and Zyzik's (2003) study on heritage speakers, several studies focus on the role of native speaking interlocutors in chat-based tasks. Blake (2000) noted that, in his study, the one NS-NNS interaction triggered fewer negotiations than the NNS-NNS interactions, and implied that this result was unfortunate because the learners enjoyed the experience immensely and even requested interactions with native speakers for future tasks. In contrast, Toyoda and Harrison (2002) found that NfM can occur in CMC environments with NS-NNS pairings. Using a custom-designed online Japanese learning environment, NNS learners chatted with NS of Japanese on a variety of topics for seven sessions of one hour each over the course of a semester. Tudini (2003) also found that online NS-NNS interaction can promote NfM. She found evidence of implicit negative feedback (recasts) even in the task-free environment of open-ended chat, although it was lower than in CMC interactions restricted to specific learning tasks. Sotillo (2005) found that advanced NNSs provided learners with corrective feedback more frequently than American NS interlocutors, perhaps because NSs were following American politeness norms.

Many NfM studies of chat find a larger number of 'reaction-to-response' utterances than predicted by face-to-face studies. Pellettieri (2000) noted with surprise that only 7% of the routines (9 of 122) did not include a reaction to response like *yes, I understand, good, ok, I'm sorry, or thank you* to signal acknowledgment of an interlocutor's help. She speculated that this tie up portion of the exchange is even more necessary in CMC than in face-to-face conversation because of lack of visual cues. In his study, Smith (2003) found that 82% of routines included a reaction to response, a percentage that is much higher than in face-to-face NfM studies, and found that the data even "reveal a strong tendency for learners to carry on negotiation routines well past this reaction to the response stage" (p. 49). He speculated that this reaction to response stage, which "largely serves the purpose of closing out the negotiation routine" (p. 49), is reached so often because CMC "removes, or at least reduces, many of the para- and nonlinguistic aspects of face-to-face speech that facilitate verbal communication" (p. 47).

Researchers have also developed their own methods and taxonomies to assess NfM in chat. Lee (2001) looked at the type of communication strategies NNS employed to facilitate NfM by analyzing 12 small groups of 40 intermediate Span-

ish learners throughout a semester as they chatted on loosely structured teacher-defined topics. Using an expanded taxonomy for NfM, she found requests as well as clarification, comprehension, and confirmation checks, as well as use of English, approximation, and invented words. Toyoda and Harrison (2002) conducted their study by categorizing each conversational unit involving a communication breakdown according to nature of the trigger. This study resulted in a taxonomy of trigger types on the word-level (recognition of new word, misuse/misunderstanding of word, pronunciation/typing error), the sentence-level (grammatical error, inappropriate segmentation, abbreviated sentence), and the discourse level (sudden topic change, slow response, intercultural communication gap).

Smith (2003) elaborated on Varonis and Gass' NfM model to account for the weakness in their model exposed by CMC, that is, the excess of reaction-to-response utterances. A flow-chart-like model operates according to polarity (+/-), so that plus or minus reaction-to-response can be explicit or implicit, the latter being a situation where the learner would employ either a 'test deduction' or a 'task appropriate response' to achieve positive understanding. In other words, in the case of the latter, if the uncomprehending student replies such that the interlocutor (or the researcher) does not note an interruption in discourse flow, it is presumed that meaning has been successfully negotiated. O'Rourke (2005) also focused on the influences of the CMC environment on NfM, noting the high number of hybrid signal types (indicators) in NS-NNS tandem MOO interactions, beyond simple clarification requests or confirmation checks. He expanded the NfM model to consider signal in terms of direct and indirect types. He found a predominance of direct signals, which he speculated might relate to the CMC setting and the shared learner status of the interlocutors, because in nonpedagogical situations, such directness would presumably be "regarded as face-threatening" (p. 449).

The current study of negotiation for meaning from an interactionist approach

Informed by the above studies, the current study was performed on chat interaction data from a telecollaborative partnership between two dyads of language learners, two Germans of advanced English proficiency partnered respectively with two Americans of high-intermediate and advanced German proficiency. Research questions mirror those of the reviewed studies, broadly asking to what extent NfM occurs in NS-NNS computer-mediated chat and what kind of expanded taxonomy might account for the negotiations found in those chats.

The analysis used data from Telekorp: the telecollaborative corpus of German and English (Belz 2006).³ Telekorp is comprised of the computer-mediated student interactions of six semesters of German-American telecollaboration (Belz & Kinginger 2002; Warschauer 1997) between an intermediate German class at a large university in the United States and an English teacher training course at a teacher training college in Germany. Students participated in progressively complex joint projects involving parallel readings of texts, email- and chat-based discussion, and website construction, and were instructed to use both English and German equally yet freely. The two dyads chosen for the analysis were Kendra, an American heritage speaker of advanced German partnered with German Manfred; and Seamus, an American speaker of high-intermediate German partnered with a German heritage speaker of advanced English, Margit.⁴ These two particular dyads were chosen because the American participants produced relatively large amounts of German in comparison to other American students, and because their proficiencies were advanced enough to preclude issues of asymmetry in production (Blake 2000; Varonis & Gass 1985; Tudini 2003).

After choosing the dyads, the researcher calculated each participant's total number of words in both languages and percentage of total production for each chat. Informed by previous research, especially Varonis and Gass' (1985) NfM model and Smith's (2003) notion of 'task-appropriate response', the researcher identified all of the negotiation sequences in the chats (see appendix) and conducted an initial grounded analysis to develop a functional taxonomy appropriate for the data. Subcategories were developed that provide specific description of a turn's interactional function and allowed for further functional analysis (see Table 1). For example, 'self-noticed' triggers are a subtype of 'trigger,' and 'self-correction' is a sub-type of 'response.' Both 'indicators' and 'responses' can be of the subtype 'request,' 'request elaboration,' or 'meta-comment.' In the case where a new or corrected form was used instead of a reaction to response, it was considered a 'task-appropriate response' (Smith 2003). Because of space limitations, sample sequences for further analysis were chosen for presentation, one from

3. The development of the corpus was funded, in part, by a United States Department of Education International Research and Studies Program Grant (CFDA No. 84.017A). The corpus owes its existence to the efforts of Julie Belz and numerous research assistants, including the author, who is grateful to Dr. Belz for permission to use the data.

4. All names are pseudonyms, although they are consistent across publications using Telekorp. Seamus' computer-mediated language play has been documented in Belz and Reinhardt (2004); other publications using data from Telekorp include Belz (2002a); Belz and Kinginger (2002); Belz and Kinginger (2003); Belz (2004); Kinginger and Belz (2005); and Belz and Vyatkina (2005).

Table 1. Expanded negotiation for meaning taxonomy

1. Trigger	Self-noticed: error is noticed by the producer of the error, as evidenced by meta-comments and/or modification attempts in subsequent turns.
2. Indicator/ response	Self-correction: modification to self-noticed trigger by producer of the error. Request: signal for interlocutor assistance. Request elaboration: elaboration to request by requester. Meta-comment: metalinguistic commentary, often indexing noticing.
3. Reaction- to-response	Regular reaction-to-response: signal indicating the end of the negotiation routine, e.g. 'thank you' or 'oh, I see'. Task-appropriate response: reaction that evidences uptake by integrating the negotiated form and/or by continuing the discourse flow.

Table 2. Kendra and Manfred: Number of words and negotiation sequences per chat

Speaker	Language	Chat 1	Chat 2
Kendra	English	13 (2%)	9 (4%)
	German	705 (98%)	199 (96%)
	Total words	718 (44%)	208 (53%)
	Negotiation sequences initiated (with German trigger)	5	0
Manfred	English	882 (97%)	178 (98%)
	German	29 (3%)	4 (2%)
	Total words	911 (56%)	182 (47%)
	Negotiation sequences initiated (with German trigger)	1	0

each dyad that best represented the focal points of analysis. These sequences were then categorized using the expanded taxonomy.

Kendra and Manfred

Both Kendra and Manfred chose to use almost exclusively the language of their interlocutor, that is, the language they were learning, in both chats (see Table 2). Production was split about half and half in each chat. There were six negotiations in Kendra and Manfred's first chat (see Appendix). Five were indicated by Kendra and were centered on German. They included a lexical self-correction, a syntactic self-correction, three requests for confirmation of lexical choice, and a direct request for meaning of a lexical choice by Manfred. The one sequence initiated by Manfred's was triggered by a lexical choice by Kendra. There were no negotiations in the dyad's second chat.

Chat Excerpt 1 presents a sample NfM sequence, which, like the other sequences, is not of the prototypical type 'trigger-indicator-response-reaction to response.' It exhibits a complex, multilayered form, consistent with previous findings

Chat Excerpt 1. Sample negotiation illustrating complex form and self-correction

Turn	Speaker	Data	Type	Subtype
23	Manfred	yes I go to Heidelberg just 3 times a week and an apartment would cost around 300 € = 300 USD	trigger	
24	Manfred	That's too expensive for me		(not part of negotiation)
25	Kendra	(related to previous topic; not part of negotiation)		
26	Kendra	eine Meatwohnung*? (an apartment?)	indicator/ trigger	request/self-noticed
27	Kendra	Meatwohnung*? Stimmt das? (apartment? is that right?)	indicator	request
28	Kendra	wie Meatwagen* (like rental car)	indicator/ trigger	request elaboration/self-noticed
29	Manfred	(related to previous topic; not part of negotiation)		
30	Kendra	Mietwagen (rental car)	response	self-correction
31	Kendra	Ich habe es falsch geschrieben* (I have written it wrong)	response/ trigger	meta-comment
32	Kendra	geschrieben (written)	response	self-correction
33	Manfred	no, sorry, it's called Mietwagen and Mietwohnung	response	
34	Kendra	Und eine Mietwohnung kostet 300 € pro Monat? (and an apartment costs 300 € per month?)	reaction to response	task-appropriate

Note. * indicates a misspelling.

on negotiation in CMC, with multiple triggers, indicators, and a task-appropriate response. Much of the negotiation involves Kendra actually correcting herself before Manfred replies. After Manfred's initial trigger, she asks for confirmation of her understanding of the German word for his use of the word 'apartment' to be *Mietwohnung*. Although she misspells it, she offers a similar word with the same prefix *miet* (rental), which then seems to prompt her to notice her own mistake, perhaps from the new morphological context of the prefix, and she corrects herself, explicitly explaining her mistake. During this explanation, she again catches that she has misspelled 'geschrieben'. Finally, after he corrects her original mistake, she smoothly integrates the object of negotiation into a task-appropriate response.

As Pellettieri (2000) noted, in CMC environments "learners have the added advantage of the visual saliency of the model form, whether delivered explicitly or implicitly, which can allow even greater opportunities for a cognitive comparison of the new form against the speaker's original utterance, which is also visible on the screen" (p. 81; see also Smith 2003: 39). The CMC technology, by immediately reifying her utterance on the screen in front of her, allows Kendra the opportunity

Table 3. Seamus and Margit: Number of words produced (including percentage) and negotiation sequences initiated (with language of trigger) per chat

Speaker		Chat 1	Chat 2	Chat 3	Chat 4	Chat 5
Seamus	English	43 (10%)	105 (25%)	206 (28%)	29 (14%)	19 (26%)
	German	387 (90%)	315 (75%)	527 (72%)	184 (86%)	55 (74%)
	Total words	430 (34%)	420 (35%)	733 (40%)	213 (33%)	74 (39%)
	Negotiation sequences initiated	1 (G)	0	0	0	1 (G)
Margit	English	589 (70%)	582 (73%)	1022 (93%)	363 (83%)	95 (83%)
	German	256 (30%)	213 (27%)	81 (7%)	74 (17%)	20 (17%)
	Total words	845 (66%)	795 (65%)	1103 (60%)	437 (67%)	115 (67%)
	Negotiation sequences initiated	0	0	2 (E)	0	0

to notice and reflect on her own production, and subsequently modify her own output (Swain 1995). Self-correction is considered a form of NfM here for several reasons. First, the initial trigger is marked with a question mark, followed by a direct request in turn 27 ('is that right?'). To Kendra, Manfred's delay in response may signal silence, because without visual paralinguistic cues, she cannot know his intention. In any case, the time gap (Crystal 2001) provides her the opportunity to notice the visual trace of her own utterance, question it, and correct herself. Although self-correction may occur in spoken discourse, in this case, it was only made salient because it was written. It is interesting to note that *meat* and *miet* sound identical, so in a spoken exchange this negotiation would probably not have occurred.

Seamus and Margit

To a lesser extent than the other dyad, Seamus and Margit chose to use primarily the language of their interlocutor, that is, the language they were learning, in all five chats (see Table 3), albeit with a fair amount of code-switching. Margit produced about two-thirds of the language, although Seamus was still quite productive compared to participants in his class. The two learners spent extra time outside of class chatting with each other, producing more chats than were required. However, there were very few negotiations in Seamus and Margit's chats (see Appendix). In the first chat, Seamus asks for confirmation of a German lexical choice; in the third chat Margit asks for confirmation of English lexical choices twice; and in the fifth chat Seamus makes a direct request for meaning of a lexical choice by Margit. There were no negotiations in the dyad's second and fourth chats.

Chat Excerpt 2. Sample negotiation illustrating textualized paralinguage and task-appropriate response

Turn	Speaker	Data	Type	Subtype
141	Margit	My dad's a a slob??? don't know the exact word...he's very schlampig...	trigger/indicator	request
142	Seamus	haha	textualized paralinguage (task-appropriate)	
143	Seamus	ja (yes)	response	
144	Seamus	meine ganze familie ist schlampig (my entire family are slobs)	reaction to response	task-appropriate

Chat Excerpt 2 presents a short NfM sequence from the dyad's third chat, where Margit asks Seamus for confirmation of her lexical choice by the use of three question marks followed by a code-switch in turn 141. Seamus answers Margit's request with laughter. Textualized paralinguage-like laughter in synchronous chat environments is an artifact of the written/spoken hybridity of the medium (Crystal 2001) and, in this case, could be considered a task-appropriate response because it could indicate to Margit that her lexical choice was appropriate. Seamus then responds with an affirmative *ja*, followed by an interesting appropriation of Margit's choice of '*schlampig*' as the German equivalent to *slob*.⁵ Although it is unknown if Seamus knew the meaning of *schlampig* previous to this exchange, his utterance in turn 144 might be considered a second task-appropriate response, as he seems to have noticed useful language in a sequence he did not initiate and smoothly appropriates it for his own use. Again, the CMC environment may provide the opportunity for this uptake, as the new item leaves a persistent, contextualized visual trace that may provide opportunities for noticing.

Summary of negotiation for meaning analyses

Negotiation of meaning in telecollaborative tasks did occur, but to a lesser extent and with greater variety of form than in other more structured tasks. It tended to center on lexical items and did not impede communication or involve communication breakdown. The two sample chat excerpts presented demonstrate the unique qualities of the 11 NfM sequences found in the 7 chats, especially self-correction and task-appropriate response. Only 5.6% of the total turns (65/1153)

5. Note that *slob* is a noun whereas *schlampig* is an adjective, which may explain Margit's hesitation. However, Seamus is proficient enough to notice this inequivalence, as he properly uses the German adjective. See also Belz and Reinhardt (2004) for analysis of Seamus' play with the word *Schlampe* (tramp).

were spent in NfM sequences, the most being 20% in Kendra and Manfred's first chat. This low number, in comparison to Smith's (2003) 33%, for example, could be due in part to the open-ended nature of the telecollaborative task, which was to discuss topics and negotiate joint class projects. It could also be attributed to advanced proficiency levels, given that the participants would have been less likely to be unfamiliar with the vocabulary than would beginning proficiency students. The low number of NfM sequences could also be due to the persistent visual trace of an utterance in the CMC environment, which would allow the interlocutor unfamiliar with a vocabulary item time to notice, reread, contextualize, or perhaps even look a word up, without indicating that he or she did not understand. Further research is necessary to investigate this possibility.

In confirmation of the findings of several of the previous studies reviewed, the analyses show that Varonis and Gass' original NfM model as it was originally proposed may require extension or alteration for analyses of CMC environments. The very notions of triggers, indicators, and responses are problematized because of the persistent visual traces provided by CMC technology. The differences between triggers and indicators are blurred, as some turns act as both trigger and indicator to some participants who notice their own inaccuracies. Turn sequence order may be complicated because of time delay, multiple and overlapping topics, and textualized paralinguage.

Socio-cognitive perspectives on CMC in telecollaboration

Implicit in any NfM analysis is the assumption that the meanings and forms being negotiated are primarily referential, ideational or transactional, centered on grammar and the lexicon; indeed, this is what most studies have found. It is difficult to consider the negotiation of pragmatic, interactional, or interpersonal meanings in an analysis that does not consider the context of situation and individual learner motivations and histories in interpretation. Even though consideration of these heuristics may allow interpretation to go beyond description, providing explanation of why learners use a variety of means to negotiate, the sheer number of variables required would most likely render a quantitative analysis unwieldy and impossible to generalize (Block 2003). To apprehend this interpersonal aspect of language learning, then, researchers have turned to a socio-cognitive approach.

Kern and Warschauer (2000) see the roots of a socio-cognitive perspective in the Hymesian conceptualization of communicative competence, where language forms are understood as meaning resources. Learning is viewed "not just in terms of changes in individuals' cognitive structures but also in terms of the social structure of learners' discourse and activity" (p. 5). Computer-assisted language

learning in this perspective is to “provide alternative contexts for social interaction” (p. 13), where learners interact not with the technology itself, but rather with each other mediated by the technology. From a socio-cognitive perspective, a learner negotiates, or rather collaborates or co-constructs not only transactional meaning but also face, solidarity, and support (Block 2003) as well as broader notions such as identity and community participation. Research considers not only the transactional or representational function of language, but the interactional or interpersonal as well (Halliday & Hasan 1985), and may involve the use of multiple data sources and heuristics that are loosely borrowed from a number of social-related disciplines, including sociocultural theory, language socialization, and paradigms with their origins in ethnography and linguistic anthropology. Atkinson (2002), for example, explained that the object of socio-cognitive research goes beyond grammar, and may include politeness, presentation of self, perspective taking, language-in-context, participation structures, speech-as-interaction, and social indexicality.

Because they do not use common theory and methods to the extent that interactionist studies on NfM do, socio-cognitive treatments of FLL in CMC environments do not necessarily share common findings, and instead focus on broader issues. As interactionists find pedagogical application of their principles in task design, socio-cognitivists find it in telecollaboration, the partnership of geographically separated classes involved in academic and intercultural exchange (Belz & Kinginger 2002; Warschauer 1997). The goals of a telecollaborative syllabus are to promote intercultural and self-awareness, expand discourse options, and encourage practice and participation through and in the target⁶ language and culture. Because these aspects are interdependent, they are not always treated as distinct from one another, and in the following literature review, there is much overlap.

Furstenberg, Levet, English, and Maillet (2001) described their Web-based curricular initiative as targeting the development of student cultural literacy. They had French and American students complete word association and other semantic networking tasks in telecollaboration, exchanging ideas on social topics in an online discussion board as well as in class discussion. Student experiences were positive, as they developed insights into each other’s cultures. In contrast, Belz (2002a) reported mixed results in her socio-cognitive treatment of a telecollaborative exchange. She applied a social realist research framework (Layder 1993, in Belz 2002a) and sociocultural theory to a telecollaborative partnership between Germans and American students. The success of the telecollaboration was highly

6. Sociocognitivists might object to this term, as it implies an endpoint and metaphorically discourages conceptualization of language learning as an ongoing, never-ending process.

contingent on the structure (context and setting) of the interaction, on the one hand, and the agency (situatedness of the activity and participant psycho-biography) of participants on the other. O'Dowd (2003) confirmed Belz' (2002a) mixed experience. He structured his syllabus for a Spanish-English email exchange project around tasks intended to promote intercultural communicative competence (Byram 1997 in O'Dowd pgs. 120–121), including tasks similar to those of Furstenberg et al. (2001). Like many treatments of intercultural communication, O'Dowd's study is theoretically grounded in the notion of 'distancing', or developing critical awareness of both the other's and one's own cultural practices by observation of 'cultural faultlines' from a 'third place' (Kramsch 1993).

Several socio-cognitive treatments of telecollaboration explain learning goals in terms of participation in communities-of-practice. Kramsch and Thorne (2002) focused on CMC discourse as a global communicative practice, explaining how differing genre expectations can result in miscommunication. In a telecollaborative exchange, French students acting to build a community of truth were misunderstood by American students reacting to build a community of trust, as the online experience gave them an "illusion of proximity" that "called for engagement rather than requests for objective information or even the negotiation of foreign meanings and beliefs" (p. 98). Hanna and de Nooy (2003) comment on French cultural discourse practices in terms of genre, providing case-studies of four learners who attempted to participate in an online French newspaper forum with native speakers outside of class. The students who were able to negotiate cultural and generic rules in the forum, by entering with an apology for poor French and adopting an argumentative stance, were apprenticed into the community, whereas the students who transferred classroom generic expectations into the task, attempting to talk about themselves, were less accepted.

There have also been several socio-cognitive studies of FLL in CMC that focus specifically on the development of communicative, specifically pragmatic competence. Sociopragmatic competence came to the fore as Kern's (1998) French students implored the American students not to use the *vous* form (formal *you*) but rather the *tu* form (informal *you*). Kinginger (2000) explained how the expanded discourse options in telecollaborative environments provided her students the opportunities to develop pragmatic competence by providing them with multiple discourse options, including email and videoconferencing, in which to make pronoun choices. Belz and Kinginger (2003) argued that the *tu/vous* system is not rule-governed but "realized within particular social interactions according to complex, inherently ambiguous mappings of social indexicality" (p. 591), thus making it particularly well suited for a socio-cognitive perspective (see also Block 2003: 130 on the complementarity of interlanguage pragmatics with a socio-cognitive approach).

The current study: Data analysis from a socio-cognitive perspective

Given that a central role of language from a socio-cognitive perspective is in “presenting and performing identities, or socially expressive versions of the self” (Atkinson 2002: 527), a socio-cognitive approach is useful for considering negotiation of face, solidarity, support, and identity, which traditional interactionist analyses overlook (Block 2003). From a socio-cognitive perspective, these negotiations occur simultaneously with negotiation for ideational meaning. Brown and Levinson’s (1987) politeness theory provides an analytical framework for the understanding of human interaction as speech acts, where language is seen as not only the transactional exchange of information but also as the interactional development of social ties. Based on interactional sociologist Erving Goffman’s (1967) notions of face, politeness theory maintains that human communicative interaction is a constant interplay of redressing (potential) affronts to face, or face-threatening acts (see also Scollon & Scollon 1995). Positive politeness or involvement strategies (e.g. complements or expressions of solidarity) seek to address affronts to an interlocutor’s positive face, whereas negative politeness or independence strategies (e.g. avoidance of imposition) seek to address affronts to an interlocutor’s negative face.

A socio-cognitive approach “necessarily entails the complementarity of socio-cultural, ethnographic, and qualitative data sources on the one hand, and psycholinguistic, linguistic, and quantitative data sources on the other” (Belz 2002a: 61). In line with this approach, the following analyses consider biographical data on the participants gleaned from surveys, course work, and interviews, on the one hand, and the preceding NfM analyses as linguistic data on the other. The negotiation sequences are expanded to bring more contextual information into the analyses, allowing for reconsideration of the data from a socio-cognitive perspective. For this reason the data are presented in a single block, in contrast to the turn analysis of the NfM analysis. The purpose of these analyses is to illustrate how negotiation for ideational meaning occurs alongside negotiation for interpersonal meaning, or meaningfulness from the participant’s perspective.

Kendra and Manfred

Kendra is a heritage speaker of German who had studied previously in Germany and had one of the highest proficiency levels in her class, according to her instructor. The content of her chat and emails indicates that she identified very strongly with European culture, wishing to live in Germany, at one point in the second chat stating: “Ich bin total unsicher ueber das Land. Ich will auf gar keinen Fall in

Amerika wohnen” (I am totally not sure about this country. In absolutely no case do I want to live in America) (turn 152). It is interesting that Manfred stated in the chat that he had a big American flag in his room, and that for him the United States was “a second home – I feel so comfortable there ...” (turn 129). This identification with the other culture – on the parts of both chatters may explain the extreme distribution of language, where both barely speak their native languages at all.

Chat Excerpt 3 is an expansion of Chat Excerpt 1. Manfred is discussing how he takes the train to his school in Heidelberg, because an apartment there is too expensive for him. In turn 25, Kendra replies to an earlier statement with a comment on how she disliked taking the train when she lived in Europe. In turn 26, Kendra asks for a clarification of the word *apartment* from Manfred, whether he means a *rental* apartment, perhaps because she knows that *apartment* to Europeans does not exclusively mean *rental*, as it often does in the United States (in contrast to *condo*).⁷ She elaborates her request in line 28 with ‘like rental car,’ and then corrects her own spelling, given this opportunity to notice her own output thanks to the visual trace of the chat. In line 31 she explains her mistake. Manfred however, by that time had probably sent his reply, commenting not on the content but on Kendra’s spelling. Kendra quickly integrates the correct spelling into a task-appropriate response, bringing the thread back to her original question in line 34. She explains the reasoning for her original question, that she wants to study in Germany again, and wants to know how expensive apartments are. Manfred then apologizes in line 41, perhaps in realization that his original response in line 33 was on the language rather than on the content.

With politeness theory as a framework, a socio-cognitive interpretation can explain Kendra’s moves, considering Kendra’s identity as a near-expert heritage speaker. In asking her partner for elaboration in turn 27, she makes an imposition on him, and by offering elaboration in the subsequent turns, she lessens that imposition and increases her status as knowledgeable and equal user of German. She bothers to correct her form in lines 30–32, even though meaning is conveyed, as a negative face move. Her reply in line 34 is more akin to that of an expert speaker, who, it is reasonable to assume, would not provide a reaction-to-response in the form of ‘thank you (for correcting my language)’ but an integrated task-appropriate response (or perhaps discourse-integrated response). This sort of response serves, again, to maintain face and re-establish equality with her interlocutor, showing herself as a competent partner, respectful of her interlocutor’s

7. Manfred’s reply in line 36 may indicate that his use of *apartment* in line 23 actually referred to just a single room. Kendra may have ended up believing that apartments in European cities are as cheap as in rural American college towns. Unfortunately, this observation was made after opportunity for interview with Kendra had passed.

Chat Excerpt 3. Sample sequence illustrating negotiation of face

Turn	Speaker	Data
23	Manfred	yes I go to Heidelberg just 3 times a week and an apartment would cost around 300 € = 300 USD
24	Manfred	That's too expensive for me
25	Kendra	Ich fand es immer so schwer zu machen weil man im kalten Wetter tausend stehen muss und warten auf den scheiss Zug (I always found it so difficult to do because you have to stand outside in the cold weather and wait for the damn train)
26	Kendra	eine Meatwohnung? (an apartment?)
27	Kendra	Meatwohnung? Stimmt das? (an apartment? is that right?)
28	Kendra	wie Meatwagen (like rental car)
29	Manfred	I don't like it either, but it's for just one more year! I got almost 4 years now
30	Kendra	Mietwagen (rental car)
31	Kendra	Ich habe es falsch geschrieben (I have written it wrong)
32	Kendra	geschrieben (written)
33	Manfred	no, sorry, it's called Mietwagen and Mietwohnung
34	Kendra	Und eine Mietwohnung kostet 300 Euro pro Monat? (and an apartment costs 300 Euro per month?)
35	Kendra	Ich moechte noch mal in Deutschland studieren... In Koeln (I want to study again in Germany...in Cologne)
36	Manfred	Yes, Heidelberg is one of the most expensive cities in Germany concerning the prices for room rental
37	Manfred	I love Colone
38	Kendra	Ich wollte eigentlich wissen wie teuer eine Mietwohnung war... (I actually wanted to know how expensive an apartment was)
39	Kendra	Meine Mietwohnung kostet genauso (my apartment costs exactly that)
40	Kendra	\$300 pro Monat (\$300 per month)
41	Manfred	Sorry! Yes, it's around 300 \$ a month

native, and her own heritage, language. Perhaps Manfred's developing identity as an English instructor led to his first reaction of corrective feedback in line 33. The message to Manfred of Kendra's face moves, however, is to respect her German identity; Manfred's apology in line 41 may be a move acknowledging this developing identity.

Seamus and Margit

Margit was an American-German (her father was American), studying to be an English teacher while holding a part-time job as an international flight attendant. Seamus was a German major planning to study abroad in Germany and become

Chat Excerpt 4. Sample sequence illustrating negotiation of solidarity

Turn	Speaker	Data
137	Margit	My parents used to fight a lot, but now it seems as though they have somehow “accepted” each other...
138	Seamus	ha das ist gut manchmal (ha that's good sometimes)
139	Margit	they don't fight over the little everyday things like toothpaste etc.
140	Seamus	yeah
141	Margit	My dad's a slob??? don't know the exact word..he's very schlampig...
142	Seamus	haha
143	Seamus	ja (yes)
144	Seamus	meine ganze familie ist schlampig (my whole family are slob)
145	Margit	that used to drive my mom up the wall-she just leaves him alone now..
146	Seamus	wir haben glueck dass wir alle gleich sind (we're lucky that we're all the same)
147	Seamus	yeah
148	Margit	well to tell ya the truth- me too in most ways,,smile

a German teacher. He chatted quite often with his German girlfriend, whom he met while visiting Germany, and had a penchant towards online language play (see Belz & Reinhardt 2004, for other examples of Seamus' playfulness). Although he was not a heritage learner, Seamus reported taking pleasure in learning and using German. According to a post-instruction interview, he also reported that he found Margit attractive when seeing her photo at the beginning of the semester. Play and flirtation could therefore be real motivations for Seamus.

In Chat Excerpt 4, while Margit attempts to negotiate form in turn 141, Seamus responds with laughter (turn 142) and an integrated, task-appropriate response (turn 144), both of which are solidarity moves. In other words, he does not say 'yes, that is correct', but rather points out a commonality between them, that they both have 'slobs' in the family. Margit's code-switch and desire to use the word *schlampig* instead of its equivalent *slob* may also be indexical of multi-competence (Belz 2002b; Cook 1991) as she chooses the word from her bilingual lexicon that is most exact. Moreover, this act may in itself index solidarity, as it appeals towards Seamus as a fellow bilingual.

Margit made the only other NfM in the chat, regarding the spelling of a word, and in the remaining four chats, Seamus initiated the only other two NfM sequences. While each chatter primarily used the other language, it was not exclusive, and there was much code-switching, which has been studied as a means of solidarity building (Gumperz 1982: 65; Myers-Scotton 1993). Moreover, there were very few NfM sequences, and they were usually quickly integrated into the discourse with task-appropriate responses. Margit and Seamus chatted five times,

two of the chats were outside of class, and three of the chats were over 1200 words; however, there were very few NfM sequences overall. In contrast, Kendra and Manfred only chatted twice, both in class.

Summary of socio-cognitive analyses

Conceptualized in terms of communication breakdown and repair, negotiation for meaning seems to be rare in advanced proficiency, NS-NNS telecollaborative exchanges. In contrast, negotiation for meaningfulness is prolific, as the participants attempt to create meaningful relationships with the other participants, the other language, and the other culture. Self-noticing and task-appropriate responses are phenomena that an NfM analysis might see as related to the computer-mediate environment. Here they are integrated into the discourse and can be seen from a socio-cognitive perspective to be motivated by the participants' moves to establish and negotiate face and solidarity. The interpersonal purpose of self-repair may be to maintain face, whereas the purpose of discourse-integrated (task-appropriate) responses may be to negotiate negative face (as in Kendra's case), or positive face, that is, solidarity (as in Seamus' case). The result of these negotiations is evidenced in how much more the second dyad interacted overall than the first.

Discussion

The purpose of the dual approach to these analyses was to illustrate the complementarities of an interactionist/negotiation for meaning approach to analysis with a socio-cognitive approach to interpretation. Epistemological differences between the two approaches, however, remain a barrier to further integration. For instructed SLA, NfM is an instructional goal because it is hypothetically connected to L2 acquisition, the ultimate attainment. For telecollaboration, intercultural exchange is a goal because it is hypothetically connected to foreign language development, a dynamic and ongoing process. The difference between the metaphors of 'acquisition' and 'development' are telling (Block 2003), in that the former implies 'foreign language competence' is something to have, while the latter implies 'competent in a foreign language' is something to become.

The metaphor of 'negotiation' is also interesting to consider. In the *American Heritage Dictionary* (Morris 1969), the intransitive definition of *negotiate* is "to treat with another in order to come to terms or reach an agreement", and its first transitive one is "to arrange or settle by conferring or discussing" (p. 879). The

term has a commercial quality about it, and implies that involved parties have a self-interested agenda in entering the process. The term also has a *telos* quality to it, in that completion or an end point is assumed, and that the 'negotiation' itself is not the normal state of things. Varonis and Gass (1985) in their early definition assume that there is one true 'horizontal' line of discourse moving 'forward,' and that negotiation only occurs when the interaction is 'pushed down,' as they explain that an indicator "essentially halts the horizontal progression of the conversation and begins the downward progression, having the effect of 'pushing down' the conversation rather than impelling it forward" (p. 75). This definition assumes a 'progressive' and static-free communicative stream which negotiation must re-establish. It is also interesting that Varonis and Gass (1985: 88) borrowed the terms *push down* and *pop back up* from the contemporaneous computer science literature; although communication-as-conduit is a physical reality for the telecommunications industry, it is only an ontological metaphor for actual human communication (Lakoff & Johnson 1980; see also Reddy 1979, and Lam & Kramsch 2003).

Van Lier (2000, 2004) offered an ecological heuristic for considering the commensurability of an interactionist account of the importance of negotiation for ideational meaning within a larger framework compatible with a socio-cognitive perspective. From an ecological viewpoint, negotiation and interaction can be understood in terms of 'affordances,' which refers to the opportunities or possibilities for action and development (both positive and negative) that a learning environment can potentially provide a learner (Gibson 1979, in van Lier 2004: 90). From this perspective, CMC technology provides affordances for noticing which learners may or may not perceive and act upon. Through the activity of interaction and negotiation, language is made available for further activity, as part of a cycle of constant renegotiation and reconstruction of both meaning and identity. As long as it is "tied to the self and the formation of identities" (van Lier 2004: 145), conversational interaction therefore provides the best environment for meaningful language learning.

Conclusion

More than 30 years ago, Wagner-Gough and Hatch (1975) noted that, at the time, the lack of an adequate model for interaction among language learners was maybe in part "due to our interest in research that isolates language form from meaning" (p. 297). They called for the study of language in context, containing all the "variables (for both the learner and the native speaker) that give life, color and meaning to the learning process" (p. 298). In other words, an analysis of interaction can be

complete only when it considers the negotiation of all aspects of meaning making, including both ideational meaning and interpersonal meaningfulness. In response, this chapter has illuminated some synthetic possibilities between two approaches that are often put at odds with each other, the interactionist and the socio-cognitive, by showing how a socio-cognitive interpretation can enhance, rather than contradict, an NfM analysis. In the future, an ecological framework (van Lier 2004) may provide a heuristic for exploration of further synergetic potential.

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Appendix. Negotiation sequences

Kendra and Manfred

Chat 1. Sequence 1

Turn	Speaker	Data
23	Manfred	yes I go to Heidelberg just 3 times a week and an apartment would cost around 300 € = 300 USD
24	Manfred	That's too expensive for me
25	Kendra	(related to previous topic; not part of negotiation)
26	Kendra	eine Meatwohnung? (an apartment)
27	Kendra	Meatwohnung? Stimmt das? (apartment? is that right?)
28	Kendra	wie Meatwagen (like rental car)
29	Manfred	(related to previous topic; not part of negotiation)
30	Kendra	Mietwagen (rental car)
31	Kendra	Ich habe es falsch geschrieben (I have written it wrong)
32	Kendra	geschrieben (written)
33	Manfred	no, sorry, it's called Mietwagen and Mietwohnung
34	Kendra	Und eine Mietwohnung kostet 300 Euro pro Monat? (and an apartment costs 300 Euros per month?)

Chat 1. Sequence 2

Turn	Speaker	Data
64	Kendra	Ich habe starke Meinung (richtig?) ueber das Thema (I have strong opinion (correct?) about the topic)
65	Manfred	which one? I think yesterday I read all your e-mails
66	Manfred	No I think that's ok. I think one of us has to have a strong one!
67	Manfred	-:-)

Chat 1. Sequence 3

Turn	Speaker	Data
83	Kendra	Ich meine dass wir Ideen davon benutzen aber die meisten sollen aus unseren Kopfen (richtig?) kommen. (I mean we use ideas from it but most should come from our heads (correct?))
84	Kendra	Ich muss meiner Lehrerin sagen was genau unser Thema ist ... (I have to tell my teacher exactly what our topic is)
85	Kendra	Was soll ich sagen? (what should I say?)
86	Kendra	Patritiotismus und Unterschiede zwischen den Amerikanischen und Deutschen Flaggen? (Patriotism and differences between the American and German flags?)
87	Kendra	geht das? (is that okay?)
88	Manfred	(Köpfen oder Koepfen) – yes most ideas must be out of our own heads, but we should fill in links etc. ((plural forms of 'head'))

Chat 1. Sequence 4

Turn	Speaker	Data
95	Kendra	Hast du starke Meinungen darauf? (do you have strong opinions on that?)
96	Kendra	oder dazu ⁸ (or on that)
97	Manfred	darüber ... I think so! (about that ... I think so!)

8. In this exchange, Kendra is trying to produce the correct preposition that fits with Meinungen (opinions). See Belz (2004) for the development of *da* compound usage in this class.

Chat 1. Sequence 5

Turn	Speaker	Data
132	Kendra	ich wollte nur wissen was fuer ein Vorbild von Amerika du hattest bevor du nach Amerika gegangen bist ... (I just wanted to know what kind of a model of America you had before you went to America)
133	Manfred	do you really mean "Vorbild"?
134	Kendra	Es tut mir leid ... Ein Bild habe ich gemeint (I'm sorry, I meant 'picture')
135	Kendra	was fuer ein Bild (What kind of a picture)
136	Manfred	I had a certain picture of the US – through the media, but especially because of my uncle

Chat 1. Sequence 6

Turn	Speaker	Data
153	Kendra	Man versteht nicht die Tatsachen, glaube ich (People understand not the facts, I think)
154	Kendra	Oops. Ich habe einen Fehler geschrieben (Oops. I wrote a mistake)
155	Kendra	Man versteht die Tatsachen nicht, habe ich gemeint (People don't understand the facts, I think)

Seamus and Margit

Chat 1. Sequence 1

Turn	Speaker	Data
22	Seamus	ja, aber es ist nicht so erschrecklich (yes, but it's not so scaring)
23	Seamus	habe ich das wort erfunden? (did I invent the word?)
24	Margit	so, can u hear dead people too, smile..
25	Seamus	erschrecklich? (scaring?)
26	Seamus	ja schon (yes of course)
27	Margit	well, u don't say erschrecklich ...
28	Seamus	was sagt man dann? (what do you say then?)
29	Margit	u meant ... it's not like a horror movie?
30	Margit	es ist nicht so beängstigend, erschreckend ... (it's not so frightening, scary)
31	Seamus	doch (on the contrary)
32	Seamus	aber not too scary

Chat 3. Sequence 1

Turn	Speaker	Data
80	Margit	it annoys me a lot
81	Seamus	das nervt mich auch (that annoys me too)
82	Margit	how do u spell annoy?
83	Seamus	du hast es richtig geschrieben (you spelled it correctly)
84	Margit	great-

Chat 3. Sequence 2

Turn	Speaker	Data
141	Margit	My dad's a a slob??? don't know the exact word .. he's very schlampig...
142	Seamus	haha
143	Seamus	ja (yes)
144	Seamus	meine ganze familie ist schlampig (my entire family areslobs)

Chat 5. Sequence 1

Turn	Speaker	Data
2	Margit	wir sind gerade am Durchdrehen grrrrrr (we are just about going crazy here grrrrr)
3	Margit	Neli just told me to get my butt back to work ...
4	Seamus	hmm was heisst durschdrehen? (hmm what does durchdrehen mean?)
5	Seamus	haha
6	Seamus	das stimmt! (that's right!)
7	Margit	we're goin crazy
8	Seamus	haha
9	Seamus	so viel mut braucht es nicht (it doesn't take so much courage)