

NEGOTIATING COMMON GROUND IN COMPUTER-MEDIATED VERSUS FACE-TO-FACE DISCUSSIONS

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ABSTRACT

To explore the impact of the communication medium on building common ground, this article presents research comparing learner use of reception strategies in traditional face-to-face (FTF) and in synchronous computer-mediated communication (CMC). Reception strategies, such as reprises, hypothesis testing and forward inferencing provide evidence of comprehension and thus serve to establish common ground among participants. A number of factors, including communicative purpose or medium are hypothesized to affect the use of such strategies (Clark & Brennan, 1991). In the data analysis, I 1) identify specific types of reception strategies, 2) compare their relative frequencies by communication medium, by task, and by learner and 3) describe how these reception strategies function in the discussions. The findings of the quantitative analysis show that the medium alone seems to have little impact on grounding as indicated by use of reception strategies. The qualitative analysis provides evidence that participants adapted the strategies to the goals of the communicative interaction as they used them primarily to negotiate and update common ground on their collaborative activity rather than to compensate for L2 deficiencies.

INTRODUCTION

This article presents the major findings of a study which considers the impact of the communication medium on grounding, defined here as the collaborative effort of two or more communicators to establish common ground, i.e., shared information or beliefs (Clark & Brennan 1991; Clark & Carlson, 1982; Clark & Marshall, 1981). To this end, learner use of reception strategies in traditional face-to-face (FTF) situations and in text-based synchronous computer-mediated communication (CMC) are compared. Reception thus subsumes both listening in FTF and reading chat messages in CMC. The specific reception strategies under consideration, including general reprise, specific reprise, hypothesis testing, and forward inferencing, provide positive or negative evidence of comprehension and thus serve to establish common ground among discourse participants. The term “reception” will be used in a way that may seem at odds with the lay meaning of the term, which typically denotes linguistic input in opposition to production or linguistic output. In FTF and CMC discussions, however, where language use is interactive, reception is never passive. Rather, listeners/message recipients play an active role in building and advancing common ground by collaborating with speakers/message senders (e.g., by indicating their current level of understanding). The study takes a multidisciplinary approach to the comparative analysis, drawing on theoretical constructs from listening strategy instruction, sociocultural theory, and communication studies.

BACKGROUND AND GOALS

Negotiating for meaning

Amidst widespread agreement that L2 interaction may be useful for the development of communicative competence, theoretical perspectives differ on *how* interaction fosters learning. Interactionist approaches in Second Language Acquisition (SLA) have investigated the relationship between interaction and modified input (Gass, 1997; Gass & Varonis, 1989; 1994; Krashen, 1985; Long, 1980; 1989; 1991; 1996;

Long & Sato, 1984; Pica, 1983; 1993; 1994; Pica & Doughty, 1985; Pica, Lincoln-Porter, Paninos, & Linnell, 1996; Schmidt, 1990; 1993), and between interaction and output modifications (Ellis, 1999; Ellis & He, 1999; Loschky, 1994; Lyster, 1998a; 1998b; Lyster & Ranta, 1997; Swain, 1985; 1993; 1995a; 1995b; 2000; Swain & Lapkin, 1995). From the input perspective, interaction first and foremost provides opportunities for comprehension, which enables learners to link the L2 forms to the meanings they encode. However, input itself is not sufficient to promote language learning. According to the Interaction Hypothesis (Long, 1985; 1996) interactive negotiation of meaning facilitates comprehension and the development of L2. As learners resolve their miscommunication, they negotiate meaning with strategies like confirmation checks or requests for clarification. Such negotiation occurs "when learners and their interlocutors anticipate, perceive, or experience difficulties in message comprehensibility" (Pica, 1994, p. 495).

In highlighting learner roles as participants in social interaction, the sociocultural perspective can provide greater clarity on some aspects of negotiation. Acquisition-based approaches emphasize learner deficiency and view negotiation moves as evidence of not-yet-comprehensible input. From the sociocultural perspective, by contrast, these strategies are bids for help in the co-construction of discourse. As such, they are only one way in which participants use language to mediate between one another in collaborative talk or joint activity (Donato, 2000). All learner talk, including negotiation, can be described as a joint activity that learners pursue with the goal of completing a task (Brooks & Donato, 1994; Frawley & Lantolf, 1984; Leont'ev, 1979; Platt & Brooks, 1994; Wertsch, 1979).

In meaningful peer interaction, learners can help each other reach higher levels of performance than they would if they worked in isolation (Vygotsky, 1978). Learners who are at a higher level help those that are less proficient by creating a Zone of Proximal Development (ZPD) which can be defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving . . . in collaboration with more capable peers" (Vygotsky, 1978, p. 86). The ZPD will only emerge if the learners assist each other through collaborative scaffolding, a process which enables them to do what they would not be able to do without assistance, such as complete a task, solve problems, and attain control over L2 forms and meanings.

In the past decade, a number of studies have explored L2 interaction and negotiation in online environments. The findings demonstrate, among other things, that CMC promotes negotiation (Blake, 2000; Lee, 2001; 2002; Pelletieri, 2000; Smith, 2003). More generally, different facets of CMC discourse quality have also been explored (Chun, 1994; Erben, 1999; Kern, 1995; Lamy & Goodfellow, 1999; Negretti, 1999; Payne & Whitney, 2002; Smith, 2003; Sotillo, 2000; Tudini, 2003). The CMC environment was found to affect the communicative interaction between language learners, allowing them to play a greater role in managing the discourse. In her 1994 study, Chun found that students performed a wider range of speech acts, including negotiation, in their online communication than in the conventional teacher-centered classroom. Smith (2003) also reports increased strategy use. He found that "learners use a wide variety of communication strategies during task-based CMC and that the CMC environment shapes this use" (p. 29). Overall, research into CMC attests to the richness of the new medium, its potential to promote strategy use in general and the use of negotiation strategies in particular. Because the interactional structures in CMC resemble FTF discourse, CMC competence may be transferable to spoken interaction (Chun, 1994).

Based on psycholinguistic approaches these studies have explored online discourse with a focus on what goes on inside the individual learner's head. Others have advocated a view of online discourse as a collaborative activity, with a number of social-cognitive studies investigating long-distance collaborations between learners of different cultural backgrounds. Such analyses have shown that the quality of online discourse, as well as student motivation, are significantly affected by a range of factors including language proficiency, institutional setting, keyboarding skills (see Belz, 2001, 2002; Kinginger, Gourves-Hayward, & Simpson, 1999; Lee, 2004; Warschauer, 2000). The approach taken in this study is different

from the previous CMC research drawn on both Interaction Hypothesis and Sociocultural Theory. I adopt Clark's theory of language use with its key concept of "common ground," defined as the information discourse participants share, including "mutual knowledge, mutual beliefs, and mutual assumptions" (Clark & Brennan, 1991, p. 127), because it bridges cognitive and social approaches to language use and allows the analyst to switch between the view of language as used by an individual learner and the view of language as a joint activity, co-created by two or more discourse participants.

Grounding

By ensuring comprehension, negotiation strategies constitute one of the ways in which interlocutors establish and update common ground. Clark and Brennan explore this process of grounding in their 1991 article. Their research provides convenient analytical tools for a comparative look at L2 negotiation across communication media.

From their vantage point, much like from the sociocultural perspective, language use is but one example of joint action, defined as an action that is carried out by two or more persons "acting in coordination with each other" (Clark, 1996, Preface). Clark (1996) posits "that people try to ground what they do together" (p. 221) in communication and in other forms of joint action such as playing a duet, shaking hands, or playing chess. For conversations to function, contributors must not only be understood, they must also establish understanding before they proceed. As speakers move through discourse they keep track of their common ground and update it moment-by-moment. Common ground is thus viewed as a dynamic concept. As interlocutors move through the joint action of communicating with each other they come to share more and more information. In this way, common ground accumulates (Clark & Brennan, 1991).

In spite of differences between the theoretical frameworks, I propose a multidisciplinary approach to comparing grounding across media. To be sure, sociocultural research is ultimately interested in human development and learning, whereas Clark and Brennan's research seeks to account for human communication, yet in contrast to acquisition-based approaches, which focus on language learning as an individual process, their approach, like sociocultural approaches, views language use in terms of cognitive and social processes. In both frameworks, language is used as a tool to complete a shared task. From a sociocultural perspective, participants use language to mediate and assist each other in the creation of the Zone of Proximal Development while Clark's theory emphasizes the role of language as a tool in grounding joint action. I hope to show that central aspects of Clark's theoretical framework such as the concept of grounding, its phases, and impact of communication media and goals on grounding can be applied to the second-language context in order to shed light on how learners negotiate common ground in computer-mediated versus face-to-face discussions.

Clark's concept of grounding includes what has been labeled 'negotiation of meaning' in the SLA context but it is conceived much more broadly. He argues that interlocutors do not only signal lack of comprehension in instances of miscommunication. In principle, they strive to ground every utterance and seek negative or positive evidence of understanding for every utterance. For FTF, signals providing positive evidence include continuers such as backchanneling (e.g., "uh huh") (Schegloff, 1982), an appropriate next turn, as well as nonverbal evidence of "continued attention" (Clark & Brennan, 1991, p. 133) such as a gaze. In this way, the concept of grounding shifts the focus away from miscommunication and learner deficiency that is at the core of acquisition-based negotiation research to highlighting its crucial role in interactive talk where participants work together to co-construct discourse.

According to Clark and Brennan (1991), each contribution contains two phases:

Presentation phase: A presents utterance *u* for B to consider. He does so on the assumption that, if B gives evidence *e* or stronger, he can believe that she understands what he means by *u*.

Acceptance phase: B accepts utterance *u* by giving *e* that she believes she understands what A means by *u*. She does so on the assumption that, once A registers that evidence, he will also

believe that she understands. (p. 130)

Any time A presents some utterance *u*, the interlocutor perceives himself in one of four states for all or part of the utterance *u*. These four states are situated along the spectrum of not hearing the utterance to understanding what the speaker meant by the utterance for purposes of the communication (Clark & Brennan, 1991).

State 0: B didn't notice that A uttered any *u*.

State 1: B noticed that A uttered some *u* (but wasn't in State 2).

State 2: B correctly heard *u* (but wasn't in State 3).

State 3: B understood what A meant by *u*. (p. 130)

Finding herself in State 2, B may use a grounding strategy such as hypothesis testing, which constitutes the presentation phase of an embedded contribution. Only after speaker A confirms the hypothesis, which is the acceptance phase of the embedded contribution, can the larger contribution be brought to a close.

Clark's model theorizes how the communication medium and goals may affect grounding. While there is a need for grounding in all communicative contexts, different communicative purposes will change grounding requirements. If the goal of the communication requires that content be understood *verbatim*, for example, grounding techniques will differ from those used in a context where understanding the gist satisfies the communicative purpose.

The model also accounts for the impact of different communication media, such as FTF or CMC on language use in a way that acknowledges the co-construction of discourse. Their analysis of medium impact rests on the central principle of "least collaborative effort":

"The principle of least collaborative effort: In conversation, the participants try to minimize their collaborative effort – the work that both do from the initiation of each contribution to its mutual acceptance" (Clark and Brennan, 1991, p. 135).

Given the cost of reception strategies, many of which require an extra turn, interlocutors will use other grounding techniques that are less costly, such as a successful next turn wherever communicative purposes permit. Moreover, the availability of grounding strategies or, in Clark's terminology, techniques varies by medium. In exclusively text-based communication, for example, nodding in agreement is not available. Therefore, Clark and Brennan posit that communication partners "ground with those techniques available in a medium that lead to the least collaborative effort" (p. 140). In CMC, for example, it is more difficult than in face-to-face communication to time an acknowledgment such as "okay". More generally, in multi-party CMC, messages sent upon completion may show up out of context. If that is the case, the recipient has to find an appropriate linguistic context for the message in order to interpret it. Other CMC characteristics may also make it more costly for participants to understand a contribution in the CMC environment compared to the FTF situation. Clark and Brennan assert that visual and aural contextual clues such as facial expressions or prosody, which often help with understanding, are lacking in text-based media. "The costs [of understanding] can be compounded when contextual clues are missing" (p. 143). On the other hand, text-based CMC is reviewable allowing participants to scroll up to re-read prior messages. CMC users thus have more time to process the input but reviewing older messages impedes the full focusing attention on currently incoming messages.¹ In sum, the different media and their associated constraints are hypothesized to impact the collaborative effort that speaker and listener, sender and recipient, expend on establishing and advancing common ground. Clark and Brennan argue that "once we assume that people need to ground what they say and that they trade off on the costs of grounding, we can account for some of the differences in language use across media" (p. 146). As costs and availability of grounding strategies vary in different media, the theory predicts that language users will prefer different grounding techniques in CMC versus FTF.

Grounding Techniques or Strategies

Among the grounding techniques studied in the L2 context, the listening strategies identified for face-to-face interaction (Ross & Rost, 1991; Vandergriff, 1997) offer a useful typology that can serve as the basis for comparison of specific grounding techniques across media. Interactive listening as defined by Vandergriff in his 1997 study of learner talk is a process in which "the listener plays an active role in cooperation with the interlocutor to fulfill the goal(s) of the interaction" (p. 494). Parallel to Vandergriff's interactive listening strategies, reception strategies are defined as utterances the listener/recipient produces to signal either lack of comprehension or current state of understanding in CMC or FTF. Building on Ross and Rost (1991), Vandergriff identified a number of strategies such as global reprise, specific reprise, hypothesis testing, and forward inferencing, which have been adapted to the purposes of this study. [Table 1](#) provides a summary.

Table 1. Reception Strategies

Reception Strategy	Definition	Examples
Global reprise	Listener/recipient asks for outright repetition, rephrasing or simplification of a preceding utterance.	Excuse me? ²
Specific reprise	Listener/recipient asks a question referring to a specific word, term or fragment that was not understood in a previous utterance.	Peter went where?
Hypothesis testing	Listener/recipient asks a question about facts in a preceding utterance to verify that s/he has understood	Peter went to the park?
Forward inference	Listener/recipient overtly indicates her current state of understanding by asking a question using given (presented) information	[If Peter went to the park] why didn't he pick up some milk on the way back?

Whereas reprises provide negative evidence of understanding and are, as such, narrowly focused on resolving perceived miscommunication, hypothesis testing and forward inferences provide positive evidence of understanding as they seek to confirm the recipient's present understanding.

To sum up, all communication is described as joint action where speaker/sender and listener/recipient work collaboratively to ensure that what has been said (or typed) has been understood. While interlocutors will always establish and build common ground as they pursue the goals of their interaction, different media have different constraints and therefore affect the use of grounding techniques (Clark & Brennan, 1991). Listening strategies such as reprises, hypothesis testing, and forward inferencing (Vandergriff, 1997), viewed here as a subset of grounding tools (Clark & Brennan, 1991)³, are not only used to signal lack of understanding by providing negative evidence of understanding, as in acquisition-based approaches. Rather, participants usually aim for a higher criterion by seeking positive evidence that utterances have indeed been understood. Only then, will a contribution be considered complete.

Methodology

Research Questions

In order to compare grounding across media, four reception strategies (global reprise, specific reprise, hypothesis testing, and forward inferencing) were identified in the two data sets (CMC and FTF), comprising small group discussions on two similar consensus building tasks (Task 1 and Task 2). The subsequent analysis was guided by the following research questions:

1. Do the frequencies of specific reception strategy types differ across media (CMC and FTF), by task (Task 1 and Task 2), and by individual learner?
2. How do the different reception strategies function in the context of the task-based discussions?

Participants

Eighteen students of advanced German participated in this study. The ten men and eight women were enrolled in subsequent semesters in one of two advanced German courses for students with at least two full years of university-level German. The general approach can be described as communicative language teaching. The courses were taught at the same level and were not sequenced. No student enrolled in both courses. Course work included films, readings of short literary and nonliterary texts, in-class discussions and essay writing. For the study, mixed-gender groups of three learners each worked on two similar consensus-building tasks.

Research Design

The quantitative and qualitative analysis compares the use of reception strategies in FTF and CMC. To this end, the investigators chose a research design with the intention of isolating the effect of communication media and minimizing the effect of other variables.

One of the investigators⁴ was the instructor for both courses. In the two classes, a total of nine groups of three took part in the two days of activities under investigation. However, only those groups that were represented in full on both days were examined for the study leaving a total of six groups of three participants each for the analysis. In the research design, it was essential to keep group membership identical for both sessions to allow for comparison across media and rule out a potential influence of group dynamics on the results.

Two consensus-building tasks were chosen as a means to ensure that students interacted with each other, as they require greater interaction among participants than open-ended tasks (Pica, Kanagy & Falodun, 1993) They can be considered comparable in many ways including the level of difficulty and task type. Both required each group to arrive at a collective opinion concerning a moral dilemma (see [Appendix A](#) for worksheets).

Each group completed one of the tasks in the face-to-face setting and the other in the electronic classroom (CMC) on two consecutive class days, using InterChange®, the real-time discussion capabilities of the [Daedalus Integrated Writing Environment](#), a program containing modules to help students in the writing process. Unlike some other chat programs, InterChange® does not display messages as they are typed. Instead, each message is keyed into a window that only the writer can see. When the student is satisfied with the message, s/he hits “send” and the message appears on the screens of the other group members. Participants signed on to the chat program using their own names.

Table 2. Groups and Tasks

Groups	TASK 1 “Krokodilfluss” (KF)	TASK 2 “Luftschutzkeller” (LSK)
Sarah/Tim/Paul	FTF	CMC
Tom/Sam/Dana		
Rick/Julia/Bob		
Susan/Liz/Frank	CMC	FTF
Isabel/Vivian/Jim		
Patrick/Mary/Bill		

In this study's crossover design, the data were balanced between the two scenarios so that both tasks,

though only completed once by each group, were carried out in both media and sequences. Half of the groups (Groups 1, 2, and 3) completed Task 1 (KF) in the FTF setting and Task 2 (LSK) in CMC on consecutive class days; the other half (Groups 4, 5, and 6) did the reverse. They completed Task 1 in the computer-mediated classroom and Task 2 in the face-to-face setting. [Table 2](#) illustrates this crossover design.

Procedure

Before coming to class, participants were given a handout with one of the two short moral dilemma texts (see [Appendix A](#)). They were asked to prepare their own personal response prior to class and to refrain from discussing their response with other students before the discussion began. The response involved a personal evaluation of the characters in the text and, as such, had no "right" answer. The in-class assignment was to negotiate a group consensus solution to the problem. Groups of three students worked together under a 30-minute time limit, discussing their positions either face-to-face or in the chatroom. For both scenarios, an organizational worksheet helped students keep track of individual and group opinions. After completing both tasks, students were asked about their perceptions of the two group discussions in a follow-up questionnaire (see [Appendix B](#)).⁵

Data Coding and Analysis

In a first round the two primary investigators (Coders 1 and 2) coded contributions into communicative units or "c-units," independent utterances providing referential or pragmatic meaning.⁶ To check for intercoder reliability, the data were subsequently coded by two independent coders (Coders 3 and 4) into c-units. There was strong agreement between coders. Cohen's Kappa is at .80 or above for both sets of data (see [Appendix D, Tables 5 and 6](#)). Coders 1 and 2 coded each c-unit on five variables, i.e., global reprise, specific reprise, hypothesis testing, forward inferencing or "none of the above," subsequently compared codes, and resolved discrepancies. Thus all utterances have been double-coded. In addition, Coders 3 and 4 coded the c-units into the five variables. Considering all cases by medium (but regardless of group) shows strong general agreement. Cohen's Kappa is above .75 (see [Appendix D, Tables 7 and 8](#)). Cohen's Kappa could not be calculated for the separate groups because missing codes created asymmetric tables.

RESULTS AND DISCUSSION

The analysis identifies various types of reception strategies ([Table 1](#)) in both sets of data, compares the type frequencies across media (CMC and FTF), by task (Task 1 and Task 2), and by individual speaker and describes how the interactive reception strategies attested in the data function in their specific contexts.

Reception strategies: Types and frequencies

Overall, the reception strategies included in the comparative analysis occur at remarkably similar rates in both environments. Calculated as a proportion of all c-units, reception strategies occur at a rate of 7.2% in CMC as compared to 5.7% in FTF.

The breakdown into different types of reception strategies yields fairly similar frequency rates in CMC and FTF (see [Appendix D, Table 9](#)). For hypothesis testing the rates are exactly the same in both communication media. For global reprises, specific reprises, and forwarding inferencing the observed differences do not reach statistical significance. Whereas Clark and Brennan's (1991) model assumes a differential effect of the medium on grounding techniques the data sets show neither quantitative nor qualitative differences when reception strategies are calculated as a percentage of overall production. In view of the absolute numbers, however, a somewhat different picture emerges. As Clark's model would predict, learners did indeed use fewer reception strategies in CMC (an average of 10 per discussion in CMC compared to 22 in FTF) but the amount of overall language production also differed substantially.⁷

Since all CMC takes more effort than FTF language production the medium's impact is not restricted to specific communication strategies. Instead, CMC reduces the amount of language production overall.

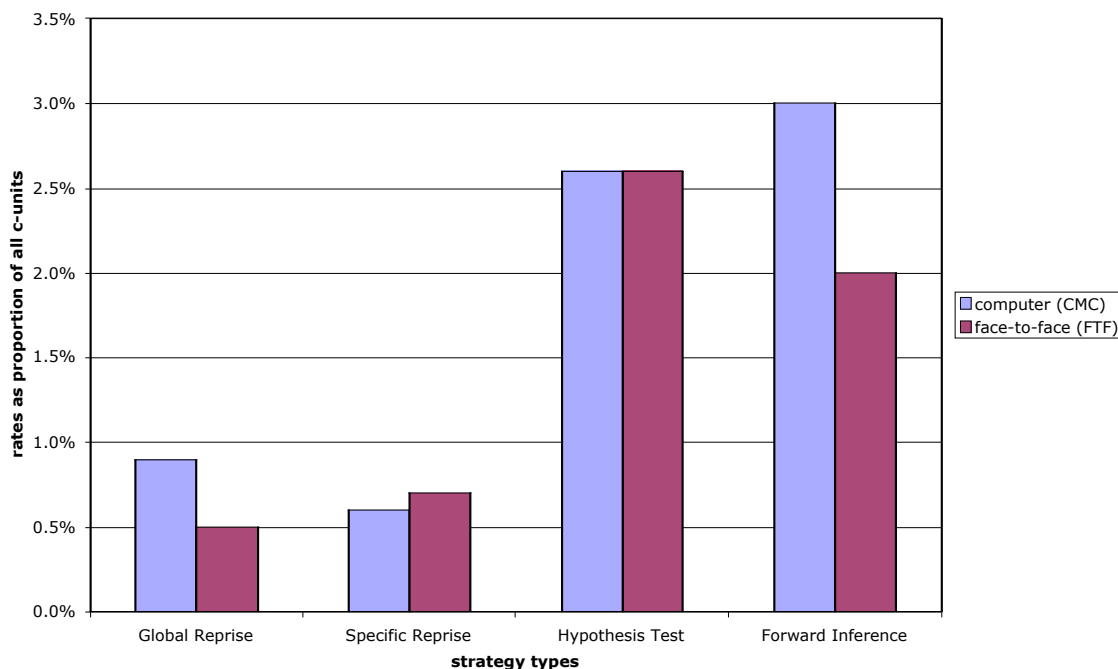


Figure 1. Reception strategies by communication medium

When calculating strategy use as a percentage of overall production, the data clearly show that CMC and FTF are very similar with respect to fostering the use of reception strategies. CMC users do not seem to have any more or less difficulty negotiating common ground with their interlocutors than listeners in FTF. The findings thus support previous studies of CMC (e.g. Blake, 2000; Chun, 1994; Lee, 2001, 2002; Pelletieri, 2000; Smith, 2003), which found CMC effective with respect to fostering negotiation among learners. The interactional structures found in both data sets do indeed resemble each other as suggested in earlier studies (e.g., Chun, 1994). However, the contrastive approach taken here also demonstrates that the online environment does not necessarily foster the use of communication strategies any more than the conventional classroom.⁸

By Task

The differences between the two tasks, chosen in the research design for their similarities, seem to have a slight effect on the rate of reception strategies. Compare [Figure 2](#).

In their discussion of Task 1 (KF) students used more reception strategies overall (at the rate of 7.6% per total c-units) than in their discussion on Task 2 (LSK) where reception strategies made up only 5.3% of all c-units but the difference is not statistically significant ($p=0.3$) (see [Appendix D, Table 10](#)).⁹ Again, as in the analysis by communication medium, the percentages displayed in [Figure 2](#) conceal the differences found with respect to overall language production. Each group produced more than twice as many c-units in their discussion of Task 1 ($M=229$ c-units) than Task 2 ($M=157$ c-units). Task 1 asks students to rank five characters individually, whereas Task 2 is a "survival" situation in which groups must only agree on two characters of six to be excluded from the life-saving bomb shelter. For Task 1 each step in the consensus building process may necessitate renegotiation of the other rankings as group members seek consensus on the relative virtue of the characters. In their questionnaire responses, some students commented on differences between the tasks. Mary, for example, deemed Task 1 "more complicated because there were many ethical, moral and, once again, gender related issues." Moreover, she seems to

imply that Task 1 generated a lot of discussion because the groups were mixed with respect to gender. She writes: "I believe women tend to sympathize more with Renate." Another participant simply stated that he "liked the [Task 1] KF exercise better in itself." A third student also found Task 1 (KF) more productive than Task 2 (LSK) because a wider range of opinions at the outset required more discussion: "In the LSK-problem we all almost agreed from the beginning – therefore it was easy to come to a conclusion = less discussion." When calculated as a percentage of overall language production, however, the perceived differences between the tasks have little effect on grounding as indicated by reception strategies use. After all, overall collective purposes of group members were very much the same for both tasks, namely to arrive at consensus. With different communication goals we would expect grounding to change (Clark, 1996).

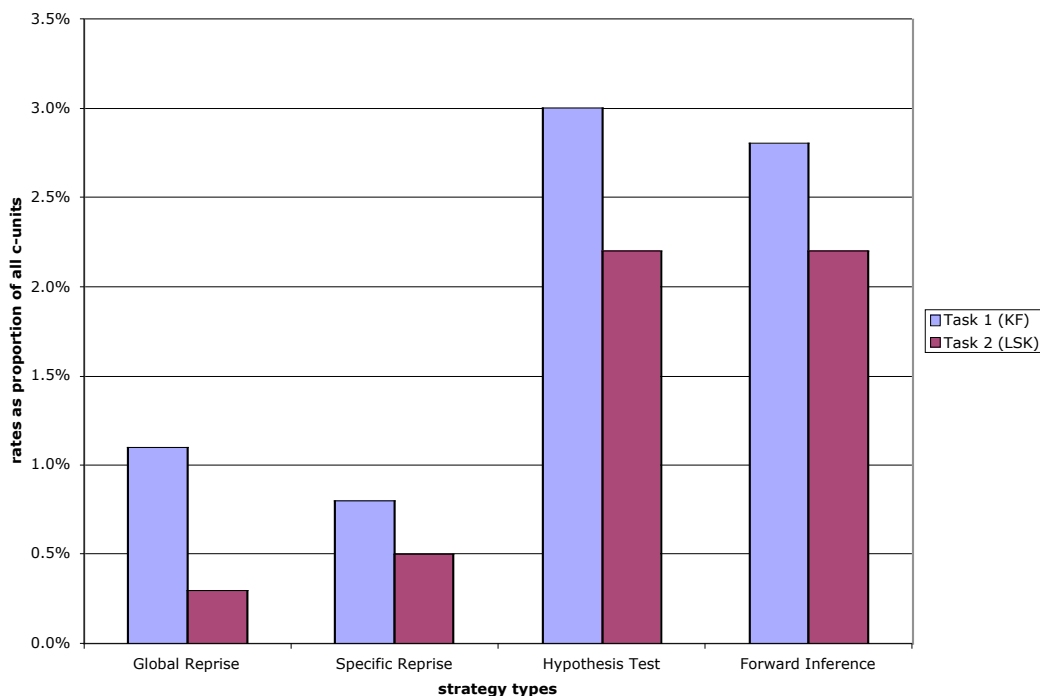


Figure 2. Reception strategies by consensus task

By individual learner

While the data yield no significant differences in reception strategies rates by medium or by task, the general trend of the participants' strategy use as a group may conceal differences across media for individual speakers. The following table shows reception strategies by individual participant and medium/task.

The participants are listed in groups of three. Some learners show differences in the use of reception strategies across media/tasks while others do not. The data thus do not yield any correlation between individual learner characteristics, strategy use and medium/task.

The analysis of individual rates reveals a weakness of the research design. For individual participants, task and medium are not independent variables because each participant completed each task in one medium only. Therefore the data conceal whether it was the task and/or the communication medium that had a differential effect on reception rates across data sets. Future comparative studies may wish to address this problem in their research design.

Given the limitations of the data, the analysis of individual rates cannot fully explain the observed

differences but it can help identify contributing factors. In exploring what might motivate an individual learner to employ reception strategies at substantially higher rates in one medium compared to the other I focus here on Tom's data. Tom uses reception strategies at a rate of 15% (of all c-units) in the FTF. By contrast, only 2.44% of his CMC c-units are reception strategies. Clearly, many factors may play a role here but his questionnaire data point to a possible explanation. He complains about the keyboarding skills of his partner(s) stating that a collaborator had "typing problems." The slow pace of his partner(s) may have caused him some frustration and, ultimately, may be the cause of his lack of engagement. Socio-cognitive studies in language learning have shown that student expectation, computer skills, and group dynamics can affect outcomes (Belz, 2001, 2002; Kinginger, et al., 1999; Lee, 2004; Warschauer, 2000). The data I collected on individual learners are insufficient to explore this line of analysis further. To be sure, this is a rich area for future research.

Table 3. Reception Strategy Use by Learner and by Medium/Task

Learner	CMC/LSK	CMC/KF	FTF/LSK	FTF/KF
Sarah	5.56%			3.77%
Tim	7.69%			4.41%
Paul	16.67%			1.67%
Tom	2.44%			15.00%
Sam	0.00%			10.59%
Dana	5.00%			4.55%
Rick	4.76%			14.79%
Julia	5.41%			6.73%
Bob	6.90%			13.39%
Susan		5.88%	4.50%	
Liz		9.52%	4.04%	
Frank		12.90%	7.69%	
Isabel		12.77%	4.00%	
Vivian		15.79%	14.44%	
Jim		2.78%	0.00%	
Patrick		2.04%	3.97%	
Mary		16.36%	6.19%	
Bill		9.76%	7.14%	

Reception strategy types and their function in context

The analysis of reception strategies in context will take the typology of reception strategies from [Table 1](#) as a starting point and summarize the specific functions associated with each of the reception strategy types in [Table 4](#).

A closer look at the function of the reception strategies in the context of the discussion helps to illuminate the quantitative results. In my analysis, I will show how L2 learners adapted general reception strategies to the tasks. By and large, reception strategies are not employed in the data to compensate for lack of comprehension.¹⁰ Rather, the function of the reception strategies is directly related to the goal of the task-based communication as grounding changes with communicative purpose. The goals of communication in the present study required recording the original individual position of the three group members, as well as keeping track of the evolving consensus. These individual rankings represented the discourse record, which, together with presuppositions on strategies, institutional scripts, and personal characteristics of other participants, made up the initial common ground. As they began their discussion, participants updated their common ground to the current state of joint activity. As the groups proceeded, participants continued to update their common ground to the current state of joint activity. Pursuing the

goal of a group consensus, learners used global reprises (e.g. "Could you re-type your lists?"), specific reprises (e.g. "Who is your number three?"), hypothesis testing (e.g. "Iwan number one?"), and forward inferencing tokens (e.g. "How come?") to obtain, confirm, or verify understanding of the status of their collaborative activity.

Table 4. Reception Strategies and Their Functions in the Data

Reception strategies	Definition	Acceptance: positive/negative evidence	Example	Function in consensus-building discussions
global reprise	Listener/recipient asks for outright repetition, rephrasing or simplification of an utterance in the preceding discourse	negative evidence	CMC	Obtain information on status of lists/rankings; Information exchange
			<i>Could you retype your lists¹¹</i>	
			FTF	
			<i>What do you have as the worst?</i>	
specific reprise	Listener/recipient asks a question referring to a specific word or fragment in the preceding discourse	negative evidence	CMC	Obtain information on status of lists/rankings; Information exchange
			<i>Who is your number three?</i>	
			FTF	
			<i>What do you have for Sinbad?</i>	
hypothesis testing	a) Listener/recipient uses questions about facts in the preceding discourse to verify that he or she has understood b) Listener completes speaker's utterance with question intonation to verify that he or she has understood. ¹²	positive evidence	CMC	Verify status of lists/rankings; Information exchange; Challenge the speaker to justify or explain his/her reasoning
			<i>Bookkeeper, his wife, activist, biochemistry [=biochemist]?</i>	
			FTF	
			<i>Iwan number one</i>	
forward inferencing	Listener/recipient overtly indicates her current state of understanding of the discussion by asking a question using established (given) information	positive evidence	CMC	Accept presentation and challenge the speaker to justify or explain his/her reasoning
			<i>Ron, she makes terrible decisions but is she the worst?</i>	
			FTF	
			<i>How come?</i>	

All types of reception strategies occurred in all phases of the discussion. What is more, the same type of reception strategy served different grounding needs in different contexts. Compare the following tokens of hypothesis testing. Both are from the same group, occur in the same FTF transcript, and are very similar in form but they function differently in their respective contexts.

Example 1 (FTF). Schleggi.

1	Julia:	<i>... und Schleggi hat ne zwei.</i>	... and Schleggi has a two.
2	Rick:	Schleggi ist eine zwei? ¹³	Schleggi is a two?
3	Bob:	<i>Ja</i>	Yes.
4	Rick:	<i>Oh Gott!</i>	Oh God!
5	Julia:	<i>Was machen wir damit?</i>	What are we gonna do with that?

Example 2 (FTF). Sinbad.

1	Julia:	<i>... und [Sinbad eine vier]</i>	... and [Sinbad a four]
2	Rick:	...und [Sinbad eine] eine vier?	... and [Sinbad a] a four?
3	Julia:	<i>Ja. Weil Peter hat gar nichts für diese Liebe getan, das stimmt.</i>	Yes. Because Peter didn't do anything for this love, that's true.
4			
5			
6	Rick:	<i>Und Peter könnte äh Sinbad fragen die Flüsse, äh, zu überqueren.</i>	And Peter could uh ask Sinbad to uh cross the river.
7			
8			
9	Julia:	<i>Ja stimmt. Dann muss er Sinbad fragen.</i>	Yes, true. Then he must ask Sinbad.
10			

[Example 1](#) illustrates hypothesis testing in the initial information exchange as group members record individual rankings. Rick indicates his understanding. Later on in the same discussion ([Example 2](#)) Rick employs hypothesis testing again but now the group is negotiating toward consensus. Julia takes the hypothesis testing token as a challenge and justifies her suggestion. Examples [1](#) and [2](#) demonstrate that Rick uses the same reception strategy to serve different grounding needs. The differences in the function between these two tokens of hypothesis testing only emerge in context. Julia's response shows that she understands what is required to build common ground in each context.

By the same token the pragmatic ambiguity inherent in reception strategies appears to cause a misunderstanding in the following exchange, cited as Example 3. The context is that Tim just sent a message indicating that he thought the group had reached consensus.

Example 3. (CMC). Medical student.¹⁴

1	Paul:	<i>Medizin ist mehr wichtig als die Studentin. Wir können nicht sagen, dass die Student unbedingt sex mit dem Professor haben wurde.</i>	The medicine [=medical student, i.e. the activist] is more important than the student. We can't be sure that the student would have sex with the professor.
2			
3			
4			
5			
6	Tim:	<i>Buchhälter, seine Frau, Studentin, Aktivist, oder?</i>	Bookkeeper, his wife, student, activist, right?
7			
8	Sarah:	<i>Wenn wir die Studentin nicht haben wie sool die Menschheit neu grunden werden?</i>	If we don't have the student how should the human race get started again.
9			
10			
11	Paul:	Buchhälter, seine Frau, Aktivist, Bio-Chemie?	Bookkeeper, his wife, activist, biochemistry [=biochemist]?
12			
13	Tim:	<i>Du hast deine Meinung wieder geändert!</i>	You have changed your mind again!
14			

Following Paul's hypothesis testing, Tim challenges Paul on having changed his mind. Paul's reception strategy is taken by the interlocutor as an opinion ('*Meinung*') rather than a hypothesis even though it ends with a question mark. This points to the pragmatic ambiguity of Paul's elliptical message, which consists of a list only. Is he checking on the current status of the consensus ('Did I understand correctly that the group has arrived at a, b, c?') or presenting his ranking to his interlocutors ('I have arrived at a, b,

c. Do you agree with me?')? If he is checking on the status of the joint activity, he is hypothesis testing, i.e., he is in Stage 2 of the acceptance phase. If, on the other hand, his interlocutor is correct that he is presenting an opinion for others to accept Paul is in the presentation phase of a new contribution.

In sum, the data cited above show that reception strategies can serve different functions and that the context does not always disambiguate between them as illustrated by the interlocutor's reactions in Example 3.

(Re-)Grounding

In the data sets, reception strategies are used mainly to build and advance common ground on the lists/rankings of characters. Why do participants return to previously grounded information in order to "re-ground" it? Why do they seek to establish or verify information that they previously considered shared information or common ground? I will explore possible motivations for this apparent "re-grounding", including changing collective purposes, the triadic constellation of the group, and finally the nature of the task.

From a sociocultural perspective each of the students' tasks can be described as a joint activity that is mediated in two ways, through language and through the external representation of the worksheet, which asks them to record the group members' original positions and the evolving and/or final consensus. However, this tool is not a direct external representation like the chessboard where no mediation through language is necessary if both players can see the board. In the present study, each participant had to use language as an interpersonal tool in order to create the external mediation tool, namely entering the list/ranking information on the worksheet. When language is required as a tool to mediate task completion participants engaged in grounding on two levels. Participants were grounding in communication on the level of the verbal record, while, on another level, participants had to manage the task and make sure that all participants are "one the same page." All joint actions, even those that do not require language use, such as waltzing, or playing chess require grounding (Clark & Brennan, 1991).

In order to produce the external representation of the evolving common ground, participants had to understand how grounding criteria changed in the process of the discussion. In the final stages of the discussion, comprehending what the interlocutor meant by an utterance was no longer sufficient for advancing common ground (Clark & Brennan, 1991). Compare Examples [1](#) and [2](#) which illustrate how hypothesis testing was used in the different phases of the discussion to meet different grounding criteria. In the final phase of the discussion the hypothesis testing token in [Example 2](#) serves as a bid for consensus on the group list. What appears to be "re-grounding" is grounding previously shared information for a new collective purpose to manage the task and/or to make a bid for group consensus.

Example 4 – (FTF). Number five.

1	Rick:	<i>Sinbad ist Nummer fünf.</i>	Sinbad is number five.
2	Julia:	<i>Und äh Iwan?</i>	And uh Iwan?
3	Rick:	<i>Iwan? Nummer eins.</i>	Iwan? Number one.
4	Julia:	<i>Und Schleggi?</i>	And Schleggi?
5	Rick:	<i>Und Schleggi ist Nummer vier</i>	And Schleggi is number four.
6	Julia:	<i>Und dann mach'n wir noch (...)</i>	And then we'll do (...)
7			
8	Bob:	<i>Was hast du für Sinbad?</i>	What do you have for Sinbad?
9	Rick:	<i>Nummer fünf.</i>	Number five.

Grounding of previously shared information can also be due, in part, to the triadic constellation. Two interlocutors may feel that a contribution has been sufficiently grounded for current purposes. As they proceed the third group member notices that he or she does not share this information and will use a reception strategy to indicate his or her current level of understanding. In both data sets a number of

reception strategies do not directly follow the presentation phase of the contribution they refer back to. In Example 4 several turns intervene between presentation (Line 1) and reception strategy (Line 8).

In [Example 4](#), Rick and Julia build common ground on Sinbad's rank. Her felicitous next turn in line 2 (*Und äh Iwan?* 'And uh Iwan?') indicates that she is in State 3, that is, she believes she understands what Rick meant by the utterance. After five intervening turns Bob indicates that he does not share this common ground and asks Rick for Sinbad's status. It is not clear whether he heard but did not comprehend Rick's contribution in line 1 (State 1) or whether he did not even notice that Rick said something about Sinbad (State 0). Due to the constellation as a three-way discussion, Rick ends up grounding his contribution separately with each interlocutor. In both data sets, participants regularly use reception strategies to ground information the other two group members previously grounded.

Another reason for "re-grounding" previously shared information is related to the nature of the tasks. As participants communicate, more and more common ground is established. Communication and other "collective actions are built on common ground and its accumulation" (Clark & Brennan, 1991, p. 127). In some contexts, accumulation can denote the process of enlarging common ground by adding on to it. In my data sets, however, building common ground at the task level necessitates negotiation and modification of contributions that were sufficiently grounded for preliminary purposes but have to be "re-grounded" later to complete the joint action of coming to consensus. Since the tasks require participants to decide on relative rather than absolute virtue shifting the position of one character affects the entire system, much like moving one piece in a chess game impacts the relative position of each piece on the board. In Task 1 a group decision to move one character to the top of the list, for example, is likely to affect the status of the other characters, that may be moved down as a result. The following exchange illustrates how common ground is updated.

Example 5. (CMC). Number two.

1	Vivian:	<i>Ist #2 Peter? Kann ich das dahinschreiben?</i>	Is Peter #2? Can I write that down?
2			
3	Isabel:	<i>OK . Peter Nummer 2. Schleggi 5.</i>	Ok. Peter number 2. Schleggi 5.
4			
5	Isabel:	<i>Sinbad 4?</i>	Sinbad 4?
6	Jim:	<i>Meine meinug ist die folgene: 1. Ivan 2 Renate 3 Peter 4 Sinbad 5 Scleggi --Ich hab' keinen Gedult mehr.</i>	My opinion is the following: 1 Iwan 2 Renate 3 Peter 4 Sinbad 5 Schleggi – I have no more patience.
7			
8			
9			
10	Vivian:	<i>Mann!!!! Sind wir alle einig? Ivan, Peter, Renate, Sinbad, Schleggi? Ja oder nein?</i>	Come on! Are we all in agreement? Iwan, Peter, Renate, Sinbad, Schleggi? Yes or no?
11			
12			
13			

In conclusion, participants frequently return to the ranking/list information they previously established as shared information. What appears to be "re-grounding" is actually grounding by different grounding criteria, for different purposes, and/or between different participants.

Interpersonal Factors

In spite of the effort to isolate the communication medium and control for as many variables as possible such as group membership and task type, countless other factors beyond the researcher's control can affect the data in multiple ways. While individual learner characteristics are likely to play a role in reception strategy use, they cannot account for the differences found across media when viewed as static factors. The interaction among triads rather than dyads may have influenced individual participants' use of reception strategies. In arguing for or against inclusion of a specific character, for example, one

participant had to defend his or her position against two. To be sure, the task requirements put interlocutors in an uncomfortable position. Consensus-building tasks, by their very nature, force speakers to either threaten the interlocutor's face by arguing for one's own position or to lose face by yielding to others. One learner, whose data was not included in the data sets, commented on the challenge of defending an opinion against the challenges of two interlocutors. "Aside from language difficulties I experience anyway, I felt like I really could not 'stand by' my opinion because I was the 'odd man out.' I didn't exactly feel like I was being ganged up on but I felt like the other people didn't even want to consider my opinion." Along the same lines, one participant noted the impact of group make-up on her discursive behavior. She described her FTF interaction in her questionnaire data: "... I believe I may have fallen into a gender-related situation. My discussion partners were two men and perhaps I was unconsciously intimidated. Hmmm!" It is not clear from this comment whether any specific aspects of her interlocutors' discursive behavior intimidated the female learner and what role, if any, the medium played. Given her comments, however, it appears that she may have lost interest in defending her position, obviating the need for reception strategies. Previous research on CMC has shown that learners' computer skills have affected the quality of online interaction (Lee, 2004).

In light of communication theory that addresses how relationships and perceptions of relationships affect the communication process, these findings are not surprising. Since interlocutors co-construct discourse in a specific group and a specific context, group and context are not constants but have to be viewed as factors which influence the individual listener/recipient. Carrier (1991) suggested that research on L2 listening should investigate how interpersonal relationships affect comprehension. Her interdisciplinary research review includes communications studies, which point to evidence that "uncertainty about the relationship in an interaction may affect comprehension as well as the other aspects of the communication process" (p. 71). While "all contributions eventually get completed" (Clark, 1996, p. 229), a range of factors along cognitive, psychological, affective, sociopsychological, and sociocultural dimensions are likely to play a role in the individual's selection of grounding strategy. For example, when Sam jokes "*Jetzt müssen (sic) wir ein T-shirt fuer jeder (sic) Mensch (sic) machen ,wo es sehr klar darauf steht, welcher (sic) Nummer sie sind.*" ('Now we need a t-shirt for every person that states clearly which number they are.') his interlocutors Tom and Dana may laugh and joke along with him or get annoyed. As successful next turns, each of these possible responses would convey that Tom and/or Dana have understood his utterance. In addition, these grounding strategies would reveal their construal of Sam's utterance based on their perceptions of the common ground and the current state of the joint activity, which include, among other things, assumptions and perceptions of institutional scripts and interpersonal relationships. Whereas Clark and Brennan's (1991) communication model accounts for grounding in communication and other joint activities, identifies possible effects of communication media and goals on grounding needs and costs, and describes a range of grounding strategies, an approach that explores empirically how learners use communication strategies in the social setting can identify how they choose from the range of grounding options.

CONCLUSION

This study compared the use of reception strategies among advanced L2 learners in synchronous CMC and FTF in order to ascertain how the communication medium affects grounding. The data sets yielded no significant difference between the frequency rates of reception strategies (global reprise, specific reprise, hypothesis testing, and forward inferencing) across media. Analyzing the data by task demonstrated that learners used reception strategies at a slightly higher rate in their discussion on Task 1 (KF) but the differences were not statistically significant. The qualitative analysis shows that reception strategies, by and large, did not function to compensate for target language deficiencies. Instead they were a way for participants to negotiate their common ground as they collaborated on building consensus. As such, the reception strategies may be viewed as bids for help to manage and control the task.

The comparison of the data sets confirms previous research that attests to CMC as a rich medium insofar as CMC promotes the use of reception strategies for L2 learners as a group much like FTF in consensus-building discussions. The results demonstrate that learners overall are just as likely in CMC as in FTF to build and advance common ground and will use the reception strategies under consideration at similar rates of frequency. In providing hard evidence of the similarities and differences of CMC and FTF discourse, research on the impact of the communication media makes an important contribution to the body of research on interlanguage discourse and communication technology. Specifically, side-by-side analyses of electronic and FTF discourse offer a fruitful direction for further research into specific L2 discourse features (cf. also Lee, 2002). By the same token, the present study illustrates the limitations of the approach. Individual variation in the use of strategies, for example, was noted but the analysis cannot fully explain why some individual participants show such different reception rates across data sets while others do not. Researchers in SLA, representing a wide range of areas of investigation from telecollaboration (Belz, 2001) to phonology (Moyer, 2004), have argued for a research orientation that emphasizes the sociocultural, affective, institutional, and psychological dimensions, which are hypothesized to affect the individual learner in the social setting. It seems such an approach with its explanatory tools could build on the findings of the present study.

In sum, the findings underscore the usefulness of CMC for the L2 classroom. Even though learners produced fewer tokens in CMC the quality of their L2 interaction, as indicated by their use of reception strategies, was comparable to that found in the FTF setting. However, instructors are advised not to overrate the potential benefits of CMC but to view the communication medium as only one variable in the complex interaction of language learners.

APPENDIX A

Student worksheets for the Task 1 (“Alligator River”) and Task 2 (“Bombshelter”)¹⁵ (translated from the original German)

Appendix A1

Alligator River

Once upon a time there was a woman named Abigail who was in love with a man named Gregory. Gregory lived on the shore of a river. Abigail lived on the opposite shore of the river. The river which separated the two lovers was teeming with man-eating alligators. Abigail wanted to cross the river to be with Gregory. Unfortunately, the bridge had been washed out. So she went to ask Sinbad, the captain of the only river boat, to take her across. He said he would be glad to if she would consent to go to bed with him preceding the voyage. She promptly refused and went to see a friend named Ivan to explain her plight. Ivan did not want to be involved at all and offered no advice or help. Abigail felt that she had no alternative but to accept Sinbad’s terms. Sinbad fulfilled his promise to Abigail and delivered her into the arms of Gregory.

When she told Gregory about her amorous escapade in order to cross the river, Gregory cast her aside with disdain. Heartsick and dejected, Abigail turned to Slug with her tale of woe. Slug, feeling compassion for Abigail, sought out Gregory and brutally beat him up. Abigail was overjoyed at the sight of Gregory getting his due. As the sun sets on the horizon, we hear Abigail laughing at Gregory. □

Step 1 – personal position (preparation)

Rank the characters in this story (Abigail, Gregory, Sinbad, Ivan, Slug) according to their character. Write a short note explaining your rankings.

Who is the *least* reprehensible/offensive/nasty? (= 1)

Who is the *most* reprehensible/offensive/nasty? (= 5)

Person ranking	Explanation
1.	
2.	
3	
4.	
5.	

Step 2 – Consensus (class discussion)

Discuss your rankings of the story’s characters (Abigail, Gregory, Sinbad, Ivan, Slug) with your partners. You have 30 minutes to negotiate a ranking list of these people on which you have all agreed.

Who is the *least* reprehensible/offensive/nasty? (= 1)

Who is the *most* reprehensible/offensive/nasty? (= 5)

You may use the following table to make notes:

Rankings partner A	Rankings of partner B	Group consensus
1.		
2.		
3		
4.		
5.		

Appendix A2

The Bomb Shelter Problem

Your group is part of a government program that runs a number of field research stations far from civilization. The Third World War has just broken out, and bombs are falling everywhere. Major cities around the world are being destroyed. All over the world, people are rushing to the bomb shelters. You have received a call from one of your research stations: they desperately need your help.

Six people have come to the station in search of shelter. There is only enough space, food, air and water in the station's bomb shelter for *four* people, who, according to experts, could only survive for *three* months on these provisions. They can see that it would be hard to remain rational and calm if they should have to choose by themselves which four people should survive, so they have called you, their supervisors. Your group must decide who is allowed into the bomb shelter. The director of the research station will follow your orders.

You also need to get to your own shelter quickly, so you have very little time—only 30 minutes—to evaluate the sketchy information available on the six candidates.

Important: the four people you choose could end up being the only surviving humans on earth. They alone would have to start a new human race.

You have *exactly* 30 minutes. Keep in mind: if your group does not reach a decision within 30 minutes there could be more than two people who die, since a deadly struggle among the six could ensue.

Here is the only information that you have on the six people:

1. accountant (male); 31 yrs. old
2. his wife; 37 years old, 6 months pregnant
3. young radical activist (Nation of Islam); medical student in his second year
4. Biochemistry professor (male); 55 yrs. old
5. college student (female); 21 yrs. old
6. policeman with a pistol (he has to keep the pistol); 40 yrs. old

You have no information on the ethnic or racial characteristics of the candidates.□

Step 1 – personal position (preparation)

Make a list of your personal preferences. Write short notes explaining your selections.

Who should be allowed into the bomb shelter? Why?

Person	Explanation

Which 2 people should *not* be allowed into the bomb shelter? Why?

Person	Explanation

Step 2 – Consensus (classroom discussion)

Discuss with your partners which 4 people should be allowed into the shelter. You have only 30 minutes to arrive at a common list, on which you can all agree.

You may use the following table to make notes:

Partner A	Partner B	Group consensus

not allowed into the shelter:

Partner A	Partner B	Group consensus

APPENDIX B

Student Questionnaire

Name: _____ **Date:** _____

(Note: All responses will be kept confidential and reported *anonymously*.)

Follow-up Questionnaire: “Krokodilfluss” & “Luftschutzkeller”

Please reflect on your experiences with the two dilemma exercises by answering the questions below.

1. If you were not present for one of the discussions, which one was it? _____

2. Face-to-Face Discussion (small group)

a. Which situation did you discuss in the face-to-face (regular classroom) format?

(please circle one): “Krokodilfluss” “Luftschutzkeller”

b. I felt I had plenty of opportunities to participate in the face-to-face discussion.

(please circle one)

not at all 1 2 3 4 *very much*
1 2 3 4 5

c. I found the face-to-face discussion interesting and engaging.

not at all 1 2 3 4 *very much*
1 2 3 4 5

d. My small group reached consensus in the face-to-face discussion.

(please circle one) *no* *yes*

e. I felt that the face-to-face discussion was successful as a language practice/learning experience.

not at all 1 2 3 4 *very much*
1 2 3 4 5

c. Additional comments. *Please comment on any of your above answers that might need further clarification:*

4. Language Background

a. How many semesters of German have you studied at the university level? _____

b. Have you been to any German-speaking countries? _____

When? _____

For how long? _____

5. Follow-up information (optional)

May we contact you in the coming weeks/months to speak with you some more about this experience, should further questions arise? (circle one) *yes / no*

If yes, please let us know how we can contact you:

Name: _____

Address: _____

(valid for what dates?)

Phone: _____

(valid for what dates?)

e-mail: _____

Signature

Date

Thank you very much for your time!!

APPENDIX C

Coding Conventions

- [] = overlapping speech (w/previous speaker)
- , = hesitation, w/end-of-phrase intonation
- . = falling intonation, as in end of statement
- ? = rising intonation, as in a question

APPENDIX D

Appendix D1.**Intercoder Reliability**

Table 5. Cohen's Kappa for C-units in CMC

	Coder 1 & 2*	Coder 3	Coder 4
Coder 1 & 2*		.80	.93
Coder 3			.94
Coder 4			

Table 6. Cohen's Kappa for C-units in FTF

	Coder 1 & 2*	Coder 3	Coder 4
Coder 1 & 2*		.85	.85
Coder 3			1.0
Coder 4			

Table 7. Cohen's Kappa for Reception Strategies in CMC

	Coder 1 & 2*	Coder 2	Coder 4
Coder 1 & 2*		.78	.76
Coder 3			.95
Coder 4			

Table 8. Cohen's Kappa for Reception Strategies in FTF

	Coder 1 & 2*	Coder 3	Coder 4
Coder 1 & 2*		.79	.78
Coder 3			.77
Coder 4			

* Coder 1 & 2 represent the consensus coding by the two main investigators

Appendix D2.**Probability Values**

Table 9. Reception Strategy Type by Communication Medium

	CMC	FTF	p<0.05
all reception strategy types	7.2%	5.7%	0.5
global reprise	0.9%	0.5%	0.4
specific reprise	0.6%	0.7%	0.9
hypothesis testing	2.6%	2.6%	1.0
forward inferencing	3.0%	1.9%	0.2

Table 10. Reception Strategy Type by Task

	Task 1 (KF)	Task 2 (LSK)	p<0.05
all reception strategy types	7.6%	5.6%	0.5
global reprise	1.1%	0.3%	0.05*
specific reprise	0.8%	0.5%	0.6
hypothesis testing	3.0%	2.2%	0.5
forward inferencing	2.8%	2.2%	0.5

NOTES

1. Taking conversation as "the base setting" (Clark 1996, p. 8-9), Clark & Brennan also submit that "listening is generally easy, and reading harder" (1991, p. 143), a psycholinguistic view which is counterintuitive when applied to L2. In sociocultural approaches, language is viewed as an interpersonal or an intrapersonal mediation tool.

2. Not actual examples from the corpus.

3. Clark and Brennan (1991) include a "relevant next turn" (p.132) as a grounding strategy. It has no separate form and is the presentation phase of the next presentation. Vandergriff (1997) has no equivalent in his typology.

4. I am grateful to my fellow investigator Lynne Frame (University of California, Berkeley) for her enthusiastic collaboration in the early phases of the study, i.e., the data collection, transcription, coding, and preliminary analysis. David Barry and Kimberly Mueller (San Francisco State University) also helped with the coding.

5. The face-to-face discussions were transcribed from audiotapes. Additional videotaping served to back up the data. Videotapes were not analyzed for proxemics or kinesics. Several students commented to investigators in person that the videotaping made them feel uncomfortable. One student comments in the questionnaire on being videotaped: "I really liked the computer discussion better than being videotaped. - Felt less nervous & self-conscious." Another writes: "It was an interesting challenge having to think so fast in German on camera."

6. The baseline measure is defined as the "c-unit" (Böhlke, 2003; Crookes, 1990; Duff, 1986). The concept of "sentence" is not well suited to spoken syntax because people do not typically speak in complete well-formed sentences. Even native speaker speech is full of false starts, repetitions, ellipses, etc. The c-units, by contrast, fit the data of interactive talk where utterances may consist of a single word only, such as 'yes', a phrase, e.g. 'me too', a clause or a multi-clausal unit. It is often impossible to define these utterances by looking at one utterance only. In fact, they often emerge only in consideration of previous discourse. Moreover, these units had to have a pragmatic discourse function in the context in order to be coded as utterances. For instance, a tag question such as "ja? 'yes?'" was counted as a separate syntactic-pragmatic unit from the preceding utterance since it functions as a comprehension check, much like "Do you know what I mean?".

7. The number of c-units per discussion in CMC ($M=116$) was much lower than in FTF ($M=270$).

8. For small groups working on tasks requiring interaction, the decentralizing effect of CMC (e.g., Chun, 1994) is likely to be negligible.

9. The difference in rates for global reprise use across tasks approaches significance (0.051 at $p < 0.05$).
10. The CMC set contains only two tokens of reception strategies which provide clear evidence of miscommunication.
11. Co-constructed turns occur in FTF only.
12. The examples are intended for quick reference only but are potentially ambiguous in the absence of context.
13. Examples from the data are provided here with surrounding context. Reception strategies are bold-faced.
14. CMC discourse will be cited exactly as it appears in the data.
15. Adapted from Simon, Howe & Kirschenbaum (1972).

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