A Learner Corpus-Driven Intervention for the Development of L2 Pragmatic Competence

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Introduction

Kasper and Rose (2001, p. 2) define interlanguage or second language (L2) pragmatics as "the way [non-native] speakers and writers accomplish goals as social actors who do not need to just get things done but must attend to their interpersonal relationships with other participants at the same time." Within this field, two aspects in particular require increased attention: (a) the development of L2 pragmatic competence over time in classroom-based language learning; and (b) the systematic relationship of such development to learners' instructional experiences. For some time, researchers in this area have observed that studies of L2 pragmatic competence generally lack a developmental scope. For example, Bardovi-Harlig (1999, p. 679) points out that L2 pragmatics is "fundamentally not acquisitional" in a review article on the state of L2 pragmatic research (see also Alcón Soler & Martínez-Flor, 2005a; Kasper, 1996, 2001; Kasper & Schmidt, 1996). In the same article, Bardovi-Harlig (p. 682) suggests that increased attention to the measurement of change in L2 pragmatic systems is a "necessary stage in the maturing of the field of [L2] pragmatics research."

Nevertheless, relatively few studies have been published to date in which changes in learners' L2 pragmatic competence have been documented closely over time in either tutored or untutored settings (e.g., Achiba, 2002; Bardovi-Harlig & Hartford, 1993; Barron, 2003; R. Ellis, 1992; Ohta, 2001; Rost-Roth, 1999; Schmidt, 1983; Siegal, 1996). Some of the studies in more recent collections of work on L2 pragmatics in instructed settings (e.g., Alcón Soler & Martínez-Flor, 2005b; Rose & Kasper, 2001) have begun to take on a developmental feel in that the temporal scope of the experimental treatments spans a period of several weeks (e.g., Alcón Soler, 2005; Koike & Pearson, 2005; Liddicoat & Crozet, 2001; Martínez-Flor &

Fukuya, 2005; Rose & Ng, 2001). The majority of these studies, however, takes the shape of cross-sectional analyses (Ortega & Iberri-Shea, 2005, p. 26) in which learners' awareness and performance data are elicited at two or three points during the period in question, usually in a pretest prior to the treatment and in one or two posttests following the treatment. As a result, the analyst's knowledge of developmental events located between data elicitation points is limited and this limitation may bias the interpretation of pragmatic development in favor of linear and incremental models of change over time (see, however, Belz & Kinginger, 2003; Belz & Vyatkina, 2005; Kinginger & Belz, 2005).

There is also an underexploration of the ways in which changes in learners' L2 pragmatic competence relate to particular types of instructional activities within L2 pragmatics research. For instance, Kasper and Rose (2001, p. 4) explain that "most of the interlanguage pragmatics research informs about learners' pragmatic ability at a particular point in time without relating it systematically to their learning experience in language classrooms." Elsewhere, Kasper (1996, p. 145) points out another but related lacuna in the research on instructed L2 pragmatics when she notes that she is "not aware of any teaching proposals based on developmental studies of pragmatic competence."

The purpose of this article is to respond to calls for the inter-illumination of interventional and longitudinal research in second language acquisition (SLA) in general (e.g., Ortega & Iberri-Shea, 2005) and in interlanguage pragmatics in particular (e.g., Kasper & Rose, 2002). In order to effect this integration, we employ the twin research methodologies of contrastive learner corpus analysis (e.g., Granger, 1998; Granger, Hung, & Petch-Tyson, 2002; Granger & Tribble, 1998) and microgenesis (Lantolf & Thorne, 2006; Vygotsky, 1978; Wertsch, 1985) in the context of "telecollaborative" language and culture learning partnerships. We examine the emergence of a critical feature of pragmatic competence in German —the comprehension and use of modal particles (MPs) by college-level American learners of German as a foreign language.

The teaching and learning of the modal particles in German

The MPs or "smallwords" (Hasselgren, 2002, p. 150) in German are important markers of interpersonal meaning because they index the speaker's attitude toward particular propositions or interlocutors. They are notoriously difficult for English-speaking learners of German to master for a variety of reasons. First, English does not possess a similar set of

corresponding particles. Second, the MPs typically are not treated adequately in commonly available teaching materials (Götze, 1993; Kotthoff & Cole, 1985; Rösler, 1983) but rather in "stepmother-like" fashion (Weydt, 1981, p. 164). Third, it is often difficult for learners as well as teachers to disentangle the various meanings of the MPs because they are rampantly polysemous (e.g., *ja* is an MP but also an answering particle). Finally, learners and teachers may not have access to authentic materials in which the MPs occur because they are generally found in more casual spoken interaction as opposed to written texts (see, however, Möllering, 2001, 2004). Very little is known about the effect of instruction on the appropriate use of MPs by learners (e.g., Cheon-Kostrzewa & Kostrzewa, 1997) and even less is known about the ways in which tutored learners develop competence in their use over time. Nevertheless, research has indicated that instruction is facilitative of learner development in this area of L2 competence (Möllering, 2004; Möllering & Nunan, 1995; Weydt, 1981, 2002).

But the available research on the teaching and learning of the MPs in German mirrors the general situation in L2 pragmatics discussed above: A number of studies are developmental and others are interventional but there are very few studies in which both perspectives are combined (e.g., Belz & Vyatkina, 2005). All developmental studies on the MPs are situated in an L2 environment. Rost-Roth (1999), for instance, provides a robust report on a longitudinal case study of untutored MP development by an Italian learner, in which the data were collected at regular intervals approximately 1 month in length over a 3-year period and supplemented with a number of data collection points from the learner's 5th and 6th years of German study (p. 169). Rost-Roth (1999, p. 174) found that the first unambiguous MP use (*mal*) by the learner appeared in her 18th month of study, and her second MP (*ja*) was used for the first time during the 31st month of study. The author concludes that the development of MP use was uneven, for example, some MPs were not used at all while others were overused and overgeneralized as politeness markers even at an advanced stage of proficiency (see Belz, 2005a, for a similar pattern of use for pronominal *da*-compounds among English-speaking learners of German). Rost-Roth's (1999) finding is corroborated by Barron (2003) who found that lexical politeness markers are overgeneralized by learners in a study abroad context. Barron argues in favor of tutored instruction in pragmatics for prospective study abroad students, which is in line with Weydt's (1981, p. 166) claim that the MPs must be taught to learners before they engage in residence abroad.

One of the few interventional studies on the teaching of the MPs is Möllering and Nunan (1995). This study explores the influence of instruction

on the development of both pragmatic awareness of the MPs and MP use by intermediate undergraduate students of German as a foreign language in Australia. Learners experienced a three-part instructional unit for one MP (*doch*) over a 5-week period. In order to produce instructional materials for this unit, the authors used authentic oral texts taken from "taped interviews and conversations of the debate style" (Möllering & Nunan, 1995, p. 60). The learners in question were already familiar with these texts because they had been used previously in the same course in the context of another classroom activity. The examples containing the MP *doch* were accompanied by detailed explanations of its functions in different contexts (p. 50). At the posttest, the researchers found that the overall suppliance rate of *doch* rose from 4.5 to 10.5 in written cloze text exercises; however, the inappropriate suppliance rate also rose from 3.9 to 4.5 (p. 57). Nearly half of the students demonstrated increased metapragmatic awareness with respect to the MP *doch*.

A number of limitations apply to the assessment measures employed in this study. First, the main data elicitation instrument, the discourse completion test, was administered in written format, whereas the instructional materials were based on an oral native speaker (NS) corpus. Additionally, the contexts for the individual test items were not well defined; this contextual vagueness may account for the increase in inappropriate uses (p. 59). Nevertheless, Möllering and Nunan (1995) make a valuable contribution to interventional research because their study is the first one of which we are aware to employ a NS corpus in the production of pedagogical materials for the teaching of the MPs; they thereby anticipate Bardovi-Harlig's (1996) call for the use of NS corpora as a source of authentic materials for the classroom-based instruction of L2 pragmatics. In later work, Möllering (2001, 2004) suggests the data-driven teaching of MPs in the classroom via handouts containing authentic NS data from oral corpora. To the best of our knowledge, the author has not reported on the application or potential influence of these handouts on learner development in classroom-based language instruction. In the next section, we briefly outline the rapidly expanding body of research on contrastive learner corpus analysis and the synergy of this analytical approach and particular aspects of telecollaborative pedagogy for the instruction of L2 pragmatic competence (see Belz, 2006, p. 208).

Telecollaborative discourse and contrastive learner corpus analysis

Recent technological advances in the area of Internet communication tools and corpus linguistics have afforded particular learning configurations and methods of analysis that lessen considerably some of the difficulties previously associated with teaching L2 pragmatics. For example, the ever increasing ubiquity of electronic forms of communication has enabled the regular establishment of Internet-mediated intercultural partnerships in which language learners at one location collaborate (Belz, 2005c) with NS keypals at another location for the purposes of social interaction and L2 language and culture learning (e.g., Belz, 2005; Belz & Thorne, 2006; Furstenberg, Levet, English, and Mallet, 2001; Kinginger, Gouvrès-Hayward, & Simpson, 1999; Warschauer, 1996). Such "telecollaborative" partnerships are well suited to developmental examinations of L2 pragmatic competence for a number of reasons. First, they have been shown to be rich in learning opportunities (see Allwright, 2005) with respect to typical aspects of pragmatic competence such as requests, apologies, agreement, disagreement, and modality as well as personal relationship building and even flirting (Belz, 2006) because they involve authentic project-based collaboration between learners and NSs. Second, such partnerships typically span several months and therefore provide developmental, intercultural data for each learner engaged in the partnership. Finally, telecollaborative data are electronic by nature, which means that researchers have access to the complete and unabridged records of learners' L2 productions for the duration of their intercultural exchanges. In other words, data collection is not limited to several points along a continuum of learner productions (cross-sectional analysis), but includes all points in between as well. This fact is in line with Vygotsky's (1978, p. 65) explanation that microgenetic analysis is predicated on density of observation in order to capture development in progress.

In a series of recent articles, Belz (2004, 2005a, 2005b, 2006), Belz, Reinhardt, and Rine (2005), Belz, Vyatkina, and Hundley (2005), Belz and Vyatkina (2005), and Kinginger and Belz (2005) have illustrated how the longitudinal scope and electronic nature of telecollaborative data can be used in conjunction with learner corpus analysis in order to provide microgenetic analyses of the development of learners' L2 pragmatic competence in interaction with NSs. Lantolf and Thorne (2006) define microgenesis as "the development of a specific process during ontogenesis" where ontogenesis is "the development of an individual." Belz and Kinginger (2003) further characterize microgenetic analysis as "the observation of skill

acquisition during a learning event" (p. 594), including the examination of "the precise, concrete social practices leading to change in learner language over time" (p. 601). In an analytical method known as *contrastive learner corpus analysis* (Granger, 1998; Granger, Hung, & Petch-Tyson, 2002), teachers and researchers compare the productions of NSs as archived in a NS corpus with those of learners as archived in a learner corpus in order to discover differences and similarities in the language use of these two populations. Based on such comparisons, teachers and researchers can draw conclusions about those areas of the L2 where the learners might be having difficulties and therefore require focused instruction. Nesselhauf (2004) notes in her survey of learner corpus research that learner corpora are relative newcomers on the linguistic scene as scholars first began to collect them in the 1990s (see also Meunier, 2002; Pravec, 2002). Because the great majority of learner corpora are monolingual in nature, researchers require an *external* NS control corpus in order to conduct contrastive learner corpus analyses. This procedure is problematic, however, because it means that the data to which the learner productions are compared were produced at a different point in time, under different circumstances, and in different contexts (Cobb, 2003; Granger, 1998; Granger & Tribble, 1998). The contextual disparity between a learner corpus and an external NS control corpus is especially prejudicial with regard to pragmatic competence because such competence generally is defined as language use in social context where context shapes use. As Kasper and Rose (2002) note,

> [d]etermining such a [baseline] norm is difficult because of the sociolinguistic variability in the language use of native speakers. Selecting the variety or varieties most relevant for a particular learner population in a principled manner is not a straightforward task for any target language. (p. 272

In this paper, we demonstrate the use of an *integrated* learner corpus and the methods of microgenetic analysis and contrastive learner corpus analysis with respect to the classroom teaching of German modal particles.

The Current Study

Data

The data examined in this study were drawn from a new bilingual learner corpus, *The Telecollaborative Learner Corpus of English and German* or *Telekorp* (see Belz, 2005b, p. 48).[1] *Telekorp* contains the complete records of the bilingual intercultural exchanges of about 200 learners who participated in German–American telecollaborative partnerships over a

6-year period (2000–2005). These exchanges have been stored in a series of relational tables in association with a wide array of learner and task variables as well as ethnographic information (see Belz, Reinhardt, & Rine, 2005). *Telekorp* is an integrated learner corpus because it contains L1/L2 German and L1/L2 English data produced by learners and native speakers *in the very same interactions* in the course of their telecollaborative exchanges. Accordingly, the L1 English subcorpus can serve as a NS comparison corpus for the L2 English productions, while the L1 German subcorpus can serve as a comparison corpus for the L2 German productions, thereby obviating the need to consult an *external* NS control corpus and simultaneously ensuring a high degree of data comparability. The bilingual nature of *Telekorp* is a consequence of telecollaborative pedagogy which requires that participants correspond half of the time in their L1 in order to provide their Internet partners with authentic models of the language that the partners are learning and half of the time in the learners' L2 in order to practice the language that they are learning (and which their netpals speak natively). At present, *Telekorp* contains over one million tokens of NS–NNS interactions putting it on a par with some of the more major noncommercial learner corpora such as the *Chinese Learner English Corpus* (1.2 million words) and the *Uppsala Student English Project* (1 million words) cited in Nesselhauf's (2004, p. 129) review of the state of the art of learner corpora (see also Granger, in press).

Participants

The focal learners in this study were 16 American students of German (9 female, 7 male) enrolled in a fourth-semester, telecollaborative German language and culture course at a major public university in the United States and their 23 German keypals (22 female, 1 male) enrolled in an English teacher education seminar at teachers' college in Germany. These students represent the entire participant cohort in the fifth data collection cycle (2004) for *Telekorp.* This cohort was chosen for analysis because available resources in 2004 enabled the daily entry of all learner productions into the corpus, which, in turn, facilitated the pedagogical intervention described below. The German language and culture course on the US side represented the first foreign language elective beyond the three-semester foreign language requirement at the US institution. Fifteen of the students on the US side were monolingual native speakers of English, while one student (Stephanie[2]) was a bilingual speaker of English and Russian. All students on the German side of the exchange were monolingual NSs of German, although many of them had learned additional foreign languages in the

course of their studies (e.g., French, Spanish, and Latin). All German students were studying to become teachers of English at the primary or secondary level in the German educational system, while the US students were pursuing a variety of undergraduate degrees. In general, the German students were more proficient in their targeted L2 (English) than were the U.S. students in their targeted L2 (German). Such discrepancies typically are related to the varying opportunities for foreign language instruction at the primary and secondary levels in the respective countries. Finally, the U.S. students ranged in age from 18–24, while the German students were 20–30. The transatlantic partner groups (see Tables 5–8 in the Appendix) were formed on the basis of mutual interests as ascertained by the Germans via perusal of the Americans' Web-biographies prior to the beginning of the correspondence.

Research design

With respect to data elicitation and pedagogical intervention, we adopt a combined longitudinal and cross-sectional design, an approach advocated by Kasper and Rose in order to "inform issues related to L2 pragmatic *development*" (2002, p. 75, emphasis in original). Longitudinal designs allow for the direct observation of developmental patterns of the same participants over an extended period of time, whereas cross-sectional designs provide the researcher with a number of snapshots of participants' performance at particular points in time (Kasper & Rose, 2002). The current study adopts multiple research designs and a mixed methods approach (Johnson & Onwuegbuzie, 2004) in order to provide a variety of interpretive resources with respect to the given data set.

The longitudinal multiple observations design was utilized for the collection of quantitative performance data. Telecollaborative NS–NNS correspondence lasted for 9 weeks during the second half of the US language course. Aggregate MP uses were ascertained for NSs and NNSs for each of these 9 weeks. Participants' MP frequencies during the pre-intervention stage served as a control baseline relative to their postintervention production. In this fashion, the participants under study acted as controls for their own future productions. The NS frequencies during the same period in the same interactions served as a comparative baseline for the learner productions. Pre- and postinstruction relative frequencies were used in order to assess the potential influence of instruction at each stage of the pedagogical intervention.

The intervention for the tutored instruction of the MPs followed the general procedures employed by Möllering and Nunan (1995) and included awareness-raising, explanation, and practice. However, we elaborated on their design in the form of modular, form-focused instruction that progressed from enhanced condition to explicit condition (Robinson, 1997, p. 224) to fine-tuned condition. Additionally, we focused on four MPs (*ja, doch, mal*, and *denn*); these were the MPs that were used most frequently by the NSs in their telecollaborative discourse during the pre-intervention phase of the interaction.

The cross-sectional design was used for the collection of metapragmatic awareness data by means of pretest questionnaires and posttest self-reported narratives (Barron, 2003, p. 107; Kasper & Rose, 2002, pp. 103–104; see also Belz & Vyatkina, 2005, pp. 35–39).

The *microgenetic* design was employed for analyzing the learners' production data qualitatively. According to Kasper and Rose (2002, p. 272), the combination of the theoretical framework of microgenesis (Vygotsky, 1978, 1986) and the analytical approach of microanalysis is best suited for tracking L2 development "[i]f conducted over a sufficiently extensive observational period" because "microanalyzed data of learner interactions make visible developmental patterns of discourse-pragmatic ability" (p. 59). Thus, each learner's (emerging) use of a focal feature was tracked electronically using *Telekorp* and linked to the date, time, context, and medium in which it was used. These uses were then examined with respect to the NSs' uses of the focal features in interaction with the learners and relative to each stage of the intervention and thus the specific instructional type. In addition, learners' MP uses were related to particular learning events and opportunities in the form of longitudinal classroom observation data based on participant observation on the part of the researchers and biographic survey and interview data, including individual language and culture learning histories.

Procedure

At the end of each instructional period, the telecollaborative data produced during that period were entered into *Telekorp* and assigned to metadata categories such as name of participant who produced the data, age, gender, proficiency level, date of production, time of production, medium of production (chat or e-mail), and language of production (English or German; see Belz, Reinhardt, & Rine, 2005, for more details on the design of *Telekorp*). Next, relevant text files (e.g., all NS e-mail data, all NNS

e-mail data) were exported for corpus analysis in *WordSmith Tools* (Scott, 2001), a commercially available software package which can perform a variety of corpus analytic procedures, including concordancing, frequency counts, and cluster analyses. Pre-intervention NS and NNS productions were analyzed for each of the four focal MPs and contrastive learner corpus analysis was performed in order to establish a comparative baseline of MP use for the NSs and a control baseline for the NNSs to be used against future postintervention performances. Based on this analysis, we established that the learners of German significantly underused the focal MPs with respect to NS uses of the same MPs in the very same interactions in the pre-intervention stage of the interactions. Thus, the results of the initial contrastive learner corpus analysis provided numerical justification for our decision to conduct a pedagogical intervention for MP use with this particular group of US learners. NS uses of the MPs in the pre-intervention phase were used in order to construct the materials used in stage 1 of the three-part intervention. Following each interventional stage, we again used *Telekorp* to retrieve any uses of the focal features by either the NSs or the NNSs and we again performed contrastive learner corpus analysis to ascertain NNS performance relative to NS performance. New performances of the MPs by either the NSs or the NNSs were incorporated into the materials used in subsequent stages of the intervention. Thus, in contradistinction to Möllering and Nunan (1995) and Möllering (2001), learners in our study were always working with materials containing examples that had been produced either by their own partners (as identified by name) or by themselves in previous correspondence. As a result, *Telekorp* facilitated retrieval of the MP uses without subjecting the participants to external tests whose appropriateness for eliciting pragmatic data has been repeatedly problematized (e.g., Brown, 2001; Rose & Kasper, 2001).

Intervention

The pre-intervention stage (see Table 1)[3] lasted for 5 weeks during which the NSs and NNSs communicated with one another using e-mail and chat. During this period, a single learner used two different MPs (*mal* and *ja*) a total of four times, while the NSs used these same MPs and two others (*doch* and *denn*) 158 times. No other learners used any MPs in the pre-intervention phase of the partnership. In light of this *in vivo* finding, we devised and administered a three-part form-focused pedagogical intervention in which we used the NS keypals' and the learners' own previously produced interactions as illustrative examples.

Instruction module 1 was administered during the first day of the sixth week of the exchange (23 November 2004). Learners were shown five excerpts from their keypals' correspondence each of which contained a focal MP. Each excerpt was projected on a large screen at the front of the classroom. The authors of each excerpt were identified by name so that learners could place them within a communicative context with which they were familiar or in which they themselves had participated. Learners were then asked to rate the expressive/emotive force of each excerpt on a scale of 1 to 6 with respect to a variety of attributes such as "friendly," "wooden," or "rude" (Möllering & Nunan, 1995; Weydt, Harden, Hentschel, & Rösler, 1983). Next, learners were asked to assign the expressive/emotive force of each excerpt to particular words or phrases in that excerpt. No learners were able to uniquely assign the expressive force of the excerpt to an MP. Finally, learners were shown the excerpts again, but this time the MPs were bolded. They were told that the bolded words carried the expressive force of the excerpts. Following instruction module 1 of the intervention, the learners corresponded with their partners for 1 more week.

Instruction module 2 of the intervention was administered during the 1st day of the 7th week of the partnership (30 November 2004). Learners received handouts on which the four focal MPs were listed along with information concerning their general meanings, syntactic restrictions, and homonyms. Then the learners were shown additional examples of NSs' uses of the MPs and homonyms again taken from *Telekorp.* Finally, certain peculiarities of the use of the MPs in context were discussed. Following instruction module 2, the learners corresponded with their NS netpals for 1 more week. During this week, the learners' use of the MPs exhibited a veritable explosion with respect to quantity (see Figure 1 in Discussion).

Instruction module 3 of the intervention was administered during the first day of the eighth week of the partnership (07 December 2004). The primary purpose of this module was to offer the learners fine-tuned instruction with respect to the meanings and syntactic restrictions on the use of the MPs. Learners were shown excerpts from *Telekorp* produced between instruction modules 2 and 3 which contained examples of their own emerging use of the MPs. Learners' names were associated with the examples so that they could recognize their own productions, where applicable. Appropriate and inappropriate uses were pointed out and explanations as well as recommendations for further use were given. After this stage, the telecollaborative exchange continued for 1 more week until the close of the American semester.

Table 1. Timeline of the pedagogical intervention

stage	calendar date	semester week	TC* week	instruments	data type
pre-intervention	Oct. 20	8–12	1–5	telecollaborative correspondence	performance
intervention stage 1	Nov. 23	13	6	questionnaire 1; handouts; telecollaborative correspondence	meta-pragmatic awareness; performance
intervention stage 2	Nov. 30	14	7	questionnaire 2; handouts; telecollaborative correspondence	meta-linguistic awareness; performance
intervention stage 3	Dec. 7	15	8	handouts; telecollaborative correspondence	performance
post-semester	Dec. 10–17	post-semester	post-semester	cumulative course portfolios; focus group interviews	meta-pragmatic awareness

note: * TC= telecollaborative

Data Presentation and Analysis[4]

Quantitative analysis: Performance

Simple counting of the MPs showed that telecollaborative discourse was replete with opportunities for learners to observe NS uses of MPs throughout both the pre-intervention and post-intervention stages. This leads us to conclude that MPs, a recognized feature of the spoken mode (Möllering, 2001, 2004), are also characteristic of computer-mediated communication (CMC). This finding contributes to research on the linguistic features of computer-mediated registers and lends support to claims about the hybrid written–spoken nature of CMC (Hewings & Coffin, 2004; Kern, 2000; Crystal, 2001; McCarthy, 1993; Herring, 1999).

Despite ample exposure to MPs in the NS discourse, only one learner (Carolyn) used one MP (*ja)* three times and another MP (*mal*) once during the 5 weeks of telecollaborative interaction prior to the pedagogical intervention. In sum, roughly 98% of the 162 MPs used in the first phase were produced by NSs. This absence of the focal feature in the participant pre-intervention data is precisely what Mellow, Reeder, and Forster (1996, p. 333) call a “flat, stable trend” that builds a baseline for a subsequent

experiment. The total number of MPs produced by all partners on both sides of the Atlantic after the first focused instruction session until the end of the correspondence (approximately a 3-week period) was almost precisely the same: 163. However, the use of the MPs by the learners demonstrates a sharp spike. Their uses account for 54.6% of the total post-intervention uses (see Table 2).

Table 2. Aggregate modal particle (MP) use by NSs and learners

stage	**pre-instruction**		**post-instruction**	
	162 MPs		163 MPs	
MPs	**NS**	**learner**	**NS**	**learner**
ja	56	3	32	43
mal	35	1	16	19
denn	33	0	15	17
doch	34	0	11	10
total	**158**	**4**	**73**	**89**
%	97.5%	2.5%	45.4%	54.6%
MPs/participant	6.87	.25	3.22	5.56

The first intervention session was designed as an enhanced instruction condition (Robinson, 1997, p. 224) where the attention of learners was directed to the focal features in their partners' uses, but no metalinguistic explanations were given. Following the first intervention session after semester week 12, two students used four MPs, three of which were inaccurate (see Table 3). The rapid increase in both frequency and accuracy takes place in stage 2, the explicit instruction module (Robinson, 1997, p. 224), where the learners were presented not only with excerpts from *Telekorp* but also with explanations of MP syntax, semantics, and pragmatics. In the week following the second stage of the intervention, 12 of the total 16 learners used 41 MPs with an accuracy of approximately 80%. In the week after the third and final stage of the intervention (the fine-tuned explanations sensitive to demonstrated learner use), 10 learners used 43 MPs, and the accuracy of their usage increased to more than 90%. Thus, it appears that the focused instruction designed according to the explicit condition positively influenced the learners' use of the MPs with regard to both frequency and accuracy.

Table 3. Aggregate modal particle use by learners during the intervention

stages	weeks	no. of learners who used MPs	total MPs	accurate	inaccurate
pre-intervention	1–5	1 (6.25%)	4	4 (100.00%)	0
module 1	6	2 (12.50%)	4	1 (25.00%)	3 (75.00%)
module 2	7	12 (75.00%)	41	33 (80.50%)	8 (19.50%)
module 3	8	10 (62.50%)	43	39 (90.70%)	4 (9.30%)
post-intervention	9	1 (6.25%)	1	1	0
total	**9**	**14 (87.50%)**	**93 (100%)**	**78 (84.00%)**	**15 (16.00%)**

Table 4. Modal particle use by individual learners during/after the intervention

Michael	17	Angela	5
Carolyn	14	Brian	3
Amy	9	Clarissa	2
Kate	9	Kelly	2
Stephanie	8	Kurt	1
Kim	7	Judy	0
Timothy	6	Angus	0
Russell	6	Jim	0

According to the total post-intervention MP frequencies, the learners can be grouped in the following way (see Table 4). Michael and Carolyn used the highest number of the MPs, therefore demonstrating the highest pragmatic performance development among the learners. The performance of Amy, Kate, Stephanie, Kim, Timothy, Russell, and Angela included 5–9 uses that could be evidence of intermediate development. Brian, Kelly, Clarissa, and Kurt attempted MP use only 1–3 times, which suggests little development of their productive ability. Finally, Judy, Angus, and Jim show no development at all.

However, drawing conclusions based on simple counting would lead to oversimplification of the results because these numbers are too low to be revealing with respect to development. We argue that a more revealing approach involves the use of the aggregate frequency patterns as a point of departure for microgenetic analysis. The frequencies for each MP used by

each NS and learner are presented chronologically in Tables 5–8 (see Appendix) with regard to semester week, communication modality (e-mail, communication modality (e-mail or chat), and accuracy. The next section reports on a microgenetic analysis of these MP uses tied to metapragmatic awareness data that help "triangulate the researcher's interpretation of authentic discourse data" (Kasper & Rose, 2002, p. 105).

Qualitative analysis: Performance and awareness

This section is organized according to the division of the learners into eight partner groups in order to account for not only individual but also intra-group developmental dynamics.

Group 1: Carolyn and Michael[5]

Carolyn and Michael were the only learners who began using the MPs following stage 1 of the intervention, and namely in a chat that occurred in the remaining 45 minutes of the classroom period in which instruction module 1 was delivered (in this module the learners' attention was focused on the MPs without an accompanying explanation of their functions). Carolyn uses *mal* twice and *denn once*, while Michael uses *mal* once. These three uses of *mal* are inaccurate, however. In the chat session immediately following instruction module 2, Carolyn uses the MPs *ja*, *doch*, and *mal* two times each, and, crucially, each use is accurate. Michael also exhibits marked development. He accurately uses the MPs *ja* and *doch* two times each after instruction module 2. His single use of *mal*, however, is still inaccurate as in the previous week. Michael uses all four focal MPs in the last chat session on December 7, 2004: 4 *ja*, 3 *doch*, 1 *denn*, and 1 *mal*. While his uses of *doch* were already accurate in the preceding stage, he uses the MP *mal* appropriately for the first time during this stage. Moreover, Michael uses *ja* and *denn* for the first time during this stage, and all these uses are appropriate. Carolyn's uses of the MPs in stages 2 and 3 are accurate.

Both Michael and Carolyn provided rich awareness data in their final course portfolios. Michael indicated that his understanding of the MPs developed considerably after the intervention, although he had been familiar with the MPs before the intervention. For example, he reports that he tended to overuse the MP *doch* in his speech and "did not really know why" he used the MPs. Carolyn demonstrates strong awareness of the relationship between MP use and communicative modality. To illustrate, she provides a rationale in example (1) for why she and her partners did *not* use the MPs in

the final essay that she and Michael wrote together with their German keypals.[6]

(1)
Here I didn't use any modal particles at all, although we talked about them a lot. There is a reason for that. As far as I understand, modal particles make the sentence friendly and informal. We didn't want to do that for this Website and my [German] partners also didn't use any modal particles. I am happy to understand these modal particles better and hopefully I was correct here [in what I said]. (Carolyn, final portfolio, December 2004)

Group 2: Russell and Kelly

The first MP use by Russell is the formulaic combination *ja mal* presented to the learners during instruction module 2. Russell used this combination in the chat immediately following the instruction (2) and in an e-mail written later on the same day (3).

(2)
Russell: Hast du das Film Home Alone 2: verloren in New York City **ja mal** gesehen?
*Have you **ja mal** seen the movie Home Alone 2: lost in New York City?*
(Russell, Kelly, Sibylle, Dorothee; chat; 30 November 2004)

(3)
Hey Doro,
Wie geht's? Mein Thanksgiving Urlaub war **ja mal** zu kurz. Es gibt eigentlich nicht genug Zeit in der Woche.
*How are you? My Thanksgiving break was **ja mal** too short. There is actually not enough time in the week*.
(Russell to Dorothee; e-mail; 30 November 2004)

Both of Russell's uses of this MP combination are inaccurate in the given context because the MP *ja* cannot be used in questions as it is in example (2) and *mal* cannot be used in assertive statements as it is in example (3). Both conditions were explained during instructional module 2 of the intervention but obviously were not internalized by Russell at that stage. Russell's inappropriate uses were discussed in instructional module 3, the main purpose of which was fine-tuning of the use of these MPs. In a chat immediately following module 3, both Russell and his US partner Kelly appropriately use *ja* (4).

(4)
Sibylle: How are ya today?
Kelly: Ich bin **ja** gut[...]
*I'm **ja** good*
Kelly: Ja ich muss **ja** gehen[...]
*Yes I have **ja** to go*
Russell: Die Zeit is **ja** um.
*The time is **ja** up.*
Sibylle: See ya.

(Russell, Kelly, Sibylle; chat; 07 December 2004)

No post-intervention awareness data are available for Russell and Kelly because they did not reflect on the MPs in their final course portfolios.

Group 3: Amy and Brian

There is evidence of the development of competence in both performance and awareness by Amy and Brian. Amy's first attempt to use the MPs *ja* and *mal* was made after instructional module 2. She uses *mal* inaccurately in an assertive statement in (5). In contrast, Amy accurately uses the MPs *ja* in a number of functions, 3 times in stage 2 and one time in stage 3. For example, she appropriately uses *ja* in an apology in (5) as an intensifier of shared knowledge (she assumes that her partner understands that she did not respond earlier because she was busy). The position of *ja* is also syntactically accurate.

(5)
Wie waren deine Woche? Ich habe nicht mit dir gesprochen. Es tut mir sehr leid, ich habe **ja mal** so viel letzte Woche gemacht.
*How was your week? I did not talk to you. I am very sorry, I had **ja mal** so much to do last* week.

(Amy to Lea; e-mail; 01 December 2004)

Additionally, Amy uses *denn* inaccurately for the first time, but her three subsequent uses are correct. In her portfolio, Amy not only cites examples with *ja* and *denn* from her e-mail correspondence, but she also uses *ja* in her meta-commentary on the MPs (6).

(6)
There are **ja** so many particles that I didn't know.

(Amy; portfolio; December 2004, emphasis added)

Furthermore, Amy included an example of "concrete poetry" in her portfolio in which she arranged the MPs examined during the intervention in

a playful design. This approach may have mediated her development with respect to the use of the particles. She concludes her entry with a resolution to use more MPs in her future writing and she remarks that the MPs should be taught earlier to learners of German.

Brian produces only three MPs (in comparison to Amy's nine uses), two times *ja* and one time *mal*. Despite this sparse performance, his uses are accurate. Additionally, Brian's awareness data suggest the potential for further development with respect to the range of MP use (7).

(7)
In my e-mail, I often use *ja*. However, I understand that *denn* makes a question a little lighter.

(Brian; portfolio; December 2004)

This admittedly short entry contains rich data on Brian's awareness of his own MP use. First, he reflects on his performance ("I often use") and cites relevant examples for the MP *ja* from his telecollaborative interaction. Then, he contrasts the phrase "I often use" with the phrase "I understand" by means of the adversative conjunction "however" to index the difference between his performance and his awareness of diverse MPs. He states that he actually *used* the MP *ja*, but not *denn* although he *understands how to use* it. To reinforce this final statement, Brian copies excerpts from some of his pre-intervention e-mails, pastes them into his portfolio, and manually inserts the MP *denn* into three of his previously asked questions, for example,

(8)
Jetz mussen wir ueber die Themen von "Ben liebt Anna" behandeln. Was denkst Du **[denn]** ueber Auslaender in Deutschland und die Auslaenderpoilik in Deutschland?
*Now, we have to [talk] about the topics from "Ben loves Anna." What do you think **[denn]** about foreigners in Germany and [politics] related to foreigners in Germany?*

(Brian; portfolio; December 2004)

These insertions are pragmatically appropriate (*denn* motivates the question in a specific conversation-related situation) and grammatically accurate. Thus, by means of these *postfacto* corrections, Brian actually demonstrates that he *does use* the MP *denn* thereby providing evidence that he *would be able to use* it in his telecollaborative correspondence as well if the exchange had not ended.

Group 4: Angela and Kate

Both Angela and Kate use various MPs after instruction modules 2 and 3 and include detailed entries on them in their portfolios. To illustrate, Angela uses *ja* and *denn* in three e-mails and includes each of these e-mails in her portfolio as examples of her MP performance. She describes her use of *denn* as both an MP and a coordinating conjunction (9). She further reports that she has learned about the multifunctionality of *denn* during the focused instruction. Thus, Angela demonstrated her increased metapragmatic awareness by annotating her own previously produced performance data.

(9)

Hallo alle !

heute Kate und ich haben unsere Projekt an den Internet gestellt. Bitte erzahlen uns was sie haben ueber unsere letzte Projekt gedacht. Was ist **denn** [MP] los in Deutschland? Mit die letzte zwei Wochen des Semesters es gibt nicht viel hier passiert nur Hausafgaben und Prufungen schrieben. [...] Ich freue mich **ja** ueber unsere Weihnachtsferien, **denn** [coordinating conjunction] ich viele mit meine Familie und Freuendin machen koennen.

Hello all!

*today Kate and I have posted our project on the Internet. Please tell us what you thought about our last project. What is **denn** [MP] going on in Germany? With the last two semester weeks there is not much [to happen] only homework and writing tests. […] I look **ja** [forward to] our Christmas break **because** [coordinating conjunction] I can do a lot with my family and [friends].*

(Angela; portfolio; December 2004)

Further, Angela crosses out her own inaccurate use of *ja* in a question and substitutes *mal* instead (10).

(10)

Bitte koennen sie ~~**ja**~~ **[mal]** ein kleines Teil fuer uns uber diese Thema in Deutschland schrieben?

*Please can you ~~**ja**~~ **[mal]** write for us a small part about this topic in Germany?*

(Angela; portfolio; December 2004)

Kate uses all four focal MPs in e-mail, chat, and in her portfolio. She also makes a thorough qualitative assessment of her partners' and her own use of the MPs because, as she explains in her portfolio, "it is important to

explain differences." First, she gives annotated examples of her partners' use of the MPs (11).

(11)
Jette: Aus was sind sie **denn**? Holz, Papier oder was?
*What are they made of **denn**? Wood, paper or what?*
"Denn" is used by Jette to ask a question. It makes the sentence nicer.
(Kate; portfolio; December 2004)

Next, Kate illustrates and discusses her own inaccurate use of the MPs.

(12)
Wohnen viele Juden **mal** in Deutschland nun?
*Do many Jews **mal** live in Germany now?*
Here I d[id] not think [enough] and "mal" is inaccurate. "Doch" is better because I asked a question.
(Kate; portfolio; December 2004)

At the close of her reflective portfolio entry on the MPs, Kate summarizes her MP performance in her previously recorded telecollaborative correspondence.

(13)
My common mistakes are that I use *ja* in questions instead of in declarative sentences, that I use *mal* in simple questions as opposed to requests, and that I don't use *denn* in questions. Hopefully I corrected these mistakes.
(Kate; portfolio; December 2004)

This summary demonstrates that Kate became aware of some of the syntactic restrictions on MP use. Although her commentaries also contain some remarks about pragmatic meaning (e.g., the MPs make a sentence friendlier and nicer), she is not yet able to explain fully the finer nuances of MP meaning. For example, the use of *mal* in (12) is inaccurate not because it is used in a question, but because the meaning of this MP entails the aspect of being "incidental" or "momentary." As a result, it cannot be used in connection with the verb "to live." This aspect of the meaning of *mal* was explained during the intervention, but Kate still does not possess control of it at this particular point in her development. Kate's annotations suggest that syntactic restrictions of the MP use are easier to understand for her than fine nuances of pragmatic meaning.

Group 5: Stephanie and Kurt

In contrast to Angela and Kate, Stephanie and Kurt took divergent developmental paths. In stage 2, Stephanie once uses *doch* in a chat and Kurt once uses *mal* in an e-mail. Both uses are accurate. In stage 3, Kurt does not produce any more MPs, but Stephanie, in contrast, accurately uses all four focal MPs in her last chat for a total of seven times.

(14)
Kannst du **denn** nach unsere Website gehen? [...]
Can you **denn** go [to] our Website?
Aber diene text war **ja** sehr schoen [...]
But your text was **ja** very nice
Was war **denn** deine wochenende?[...]
*How was **denn** your weekend?*
Das is **ja** schon[...]
*This is **ja** [excellent]*
Schickst du **mal** mir die bilder auf meinem E-mail[...]
*Send **mal** me the pictures to my e-mail*
Jetzt sollen kurt und ich **mal** mit den Bildren arbeiten[...]
*Now kurt and I have **mal** to work with the pictures*
Was denkst du **denn** ueber die Seite?
*What do you think **denn** about the site?*
(Stephanie, Kurt, Bärbel, Danica, Lili, Corinne; chat; 07 December 2004)

In addition to these performance data, Stephanie's cumulative course portfolio provides awareness data with respect to her use of the MPs.

(15)
At first I wasn't sure about their use. I thought that my language without them was bad. However, after I re-read the e-mails from my partners I ascertained that they use the MPs a lot. I began to look for the MPs in the e-mails and try to understand why they were used. I thought that *denn, ja,* and *mal* were used the most. In my last chat I tried to use them and I think that I was successful. (Stephanie; portfolio; December 2004)

As Stephanie related in both interview and in her portfolio, she did not want to run the risk of damaging the positive interactional rapport that she had worked hard to establish with her German partners throughout the course of the semester by using an inaccurate and potentially offensive MP until the possible consequences of such an interactional misstep had essentially evaporated. After she became confident in her understanding of

the finer nuances of the MP meanings, she used all of them accurately in her last chat.

The awareness data for Kurt stand in sharp contrast to those of Stephanie. Although Kurt gives an accurate example of *mal* taken from his previous telecollaborative correspondence in his short portfolio entry, he refers to the MPs as "modal verbs" and includes a completed grammatical exercise from Dippmann and Watzinger-Tharp (2000) on the modal *verbs* (e.g., can, should, could) in order to demonstrate his development with respect to modal *particle* understanding and use. While Stephanie developed with regard to both performance and awareness of the MPs after the pedagogical intervention, Kurt's meta-pragmatic awareness appears to lag behind his performance.

Group 6: Judy and Kim

In addition to the focused instruction on MP use in the course of the intervention, Judy and Kim experience many examples of MP use in the telecollaborative discourse of their three German netpals, Kristl, Cassandra, and Sigrid. For example, Sigrid uses *ja* three times in one e-mail written in stage 3. Nevertheless, Judy does not use any MPs in her telecollaborative interaction nor does she reflect on them in her portfolio. In contrast, Kim accurately uses *ja* a total of seven times in her e-mails after instruction module 3. For example, the first *ja* in (16) emphasizes mutual consent and the second *ja* reinforces positive appraisal.

(16)
Wir hatten nur genug Zeit ein Rough Draft auf die Web zu stellen. Es kostet **ja** viel Zeit eine Website zu machen, deshalb haben wir keinen Hintergrund. Danke schoen fuer meine Blumen. Sie sieht **ja** sehr schoen aus und es war suess von ihr, zum mir sie zu schicken.

We only had enough time to post a rough draft on the Web. It takes **ja** a lot of time to make a Website, that is why we have no background.
Thanks a lot for my flowers. They look **ja** very pretty and it was very sweet of you to send them to me. (Kim to Sigrid; e-mail; 08 December 2004)

In her portfolio, Kim relates that she noticed the MPs in e-mails before the pedagogical intervention but that she did not know what they meant. She further explains that she "developed while learning about the modal particles" after the intervention. Kim's awareness is evidenced by a neat and precise comment on the pragmatic meaning of the MPs.

(17)

One writes *ja* in sentences in order to strengthen the sentence and [one] writes *denn* in questions in order to soften the question.

(Kim; portfolio; December 2004)

Although Kim does not reflect on the MPs in her partners' writing, frequent use of *ja* by her NS keypals might have contributed to her noticing of this particular particle and her subsequent development in its use because she accurately uses *ja* in the same functions that her partners use. The concentration of the *ja* uses by members of this partner group in weeks 14 and 15 is made visual in Table 5 (see Appendix).

Group 7: Timothy and Clarissa

Timothy uses the MPs *ja, mal,* and *denn* eight times total in his chats in stages 2 and 3. Five of these uses are accurate. However, he does not provide any metapragmatic reflections on his performance. Clarissa seems to be more cautious in her performance. She accurately using *ja* and *mal* one time each. In contrast, in her portfolio, Clarissa comments on her increased awareness of the MPs after the pedagogical intervention.

(18)

I realized that they really play an important role in softening the language and they make the writing more personal...I think that if I really begin to use more modals in the future, then they will appear more frequently, and I will not have to remember all the time to watch my writing to include some of them. (Clarissa; portfolio; December 2004)

Clarissa's meta-commentary neatly illustrates her awareness of the fact that she does not possess full control of the MPs yet. She expresses her desire to practice them so that she can access them more automatically.

Group 8: Angus and Jim

Angus and Jim did not use any MPs in their telecollaborative correspondence, nor did they mention them in their portfolios.

Qualitative analysis: Awareness (peer assistance)

There are three instances where learners demonstrate their metapragmatic awareness while explicitly mentioning the modal particles to their German partners and/or requesting assistance in their use. All these instances occurred in the chat immediately following instruction module 1.

In (19), Timothy attempts to use the formulaic combination *ja mal* and asks his German partner Cynthia if his use was correct. However, he does not receive any answer.

(19)
Timothy: Wir werden es fertig **ja mal** bis Dienstag machen...
*We will complete it **ja mal** by Tuesday [...]*
Timothy: Ist das richtig?
Is that correct?
Timothy: **ja mal**?
Cynthia: Timothy, remember that we also wanted to connect our parts a bit to Ben kliebt Anna
Cynthia: Liebt
Timothy: OK [...]
Clarissa: Ich musse **mal** bald gehen, unser Klasse ist schon fast vorbei [...]
*I have **mal** to go soon, our class is already almost over*
Timothy: Ja, ich muss **mal** gehen
*Yes, I have **mal** to go*
(Timothy, Clarissa, Cynthia, Silja; chat; 30 November 2004)

Timothy's use of the combination *ja mal* in (19) after module 2 is appropriate in an expression of intention, although the word order in the sentence is inaccurate. Timothy explicitly asks his partners about the accuracy of his MP use, but they switch instead to a different topic and Timothy does not pursue the question further. Near the end of the chat, Timothy accurately uses *mal* following Clarissa's analogous use of the same particle. A similar lack of feedback from the Germans to the Americans can be seen in two other chat exchanges on the same day where the American partners mentioned the MPs, as illustrated in (20).

(20)
Marina: Hast du zeit oder habt ihr noch presentationen?
Do you have time or do you still have presentations?
Angus: Wir haben ein presentationen, uber "wuerzwoerter."
We have a presentation, about „spicy words."
Marina: What's that?
Angus: **Ja, denn, mal, doch**, auch....
Marina: Aha
Marina: Aber wir nennen diese woerter "fuellwoerter" ...hihi
But we call these words „filling words" ....haha

Marina: Can you write us an e-mail with all the Websites you used for the project And interesting links we could include in the project?

Angus: Yeah, sure.

(Marina and Angus; chat; 30 November 2004)

In these two examples, learners mention the MPs to their NS partners in the context of a chat; however, the NSs do not appear to pick up on this teaching point for the learners, even though one of the stipulations of the exchange was that partners should provide one another with three pieces of language-related feedback per correspondence. Marina, for instance, suggests an alternative meta-lingual term for the MPs and then adds a laughter token ("hi-hi"), which may function to dismiss the importance of the question. Immediately thereafter, she switches the conversational topic to the joint class project —similar to Cynthia in line four of (19). In yet another chat exchange, the German partner Sibylle asks the learner Russell "what's that" when he mentions the MPs. When he responds with a factual answer, Sibylle seems to indicate that she understands what the MPs are but that she doesn't understand why Russell and his peers are learning about them in their German course.

Finally, there is one case where Norma, a NS, provides feedback on a sentence in an e-mail in which Angela uses an MP.

(21)

Anyway, before this Tuesday's class starts, I will correct your e-mail quickly.

Heute mochte **ja** ich ein bisschen mehr ueber Weihnachten geschrieben. It's: schreibe.

*Today I would like **ja** to [write] a bit more about Christmas.*

(Norma to Angela; e-mail; 07 December 2004)

In this example, Norma corrects Angela's inaccurate verb form, but she does not mention the inaccurate word order with respect to the MP *ja*, which should follow and not precede the subject in the sentence in question. This last example illustrates that Norma did not consider this error to be a candidate for correction at this point in time even when error correction and not the discussion of content was the communicative goal.

Discussion

The results of the contrastive learner corpus analysis showed that only four MPs were used by learners (in fact, one and the same learner) during the 5 weeks of telecollaborative interaction prior to the pedagogical intervention, whereas the NSs used 158 MPs during the same time. After the

first stage of the three-part pedagogical intervention, other learners began using the MPs in their telecollaborative correspondence. This use gradually increased with respect to the number of participants, range, and accuracy of use following the progression of the pedagogical intervention from enhanced to explicit to fine-tuned instruction based, in all cases, on the learners' own previously produced discourse. After instruction module 2, the learners actually *overuse* the MPs in comparison to the NSs. Figure 1 summarizes the relationship of time (measured in semester weeks) and development of MP use by the learners (measured in MP frequencies) in comparison to the NS uses before and during/after the developmental intervention. The data for the beginning (8th) and the final (16th) semester week were dropped because there was limited NS–NNS correspondence during these weeks due to the nature of the assigned tasks.

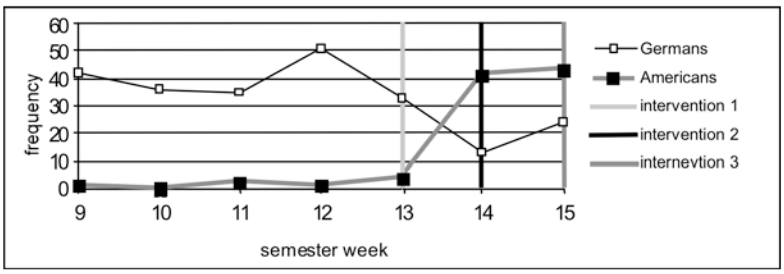

Figure 1. Developmental course of MP use.

The results of the quantitative analysis clearly suggest that explicit instruction (instruction module 2) had a much stronger impact on the development of performance ability by the learners than the enhanced instruction (instruction module 1). This finding lends support to the argument advanced by various researchers (e.g., Kasper & Rose, 2002; Weydt, 2002) that explicit form-focused instruction is conducive to L2 pragmatic development. Of course, it is also possible that student performance after instruction module 2 is in response, in part, to the combined influence of enhanced instruction and explicit instruction.

Although some general tendencies can be seen in the quantitative analysis, qualitative analysis of both performance and awareness data provides much deeper insight into the developmental patterns followed by these particular learners. First, before instruction, only one learner (Carolyn) exhibited both specific meta-pragmatic awareness of the functions of the MPs and performative ability in using them. Other learners did not use the

MPs, although the correspondence of their German partners was replete with them, nor did they understand their meanings, as evidenced by their pre-instruction questionnaire answers. All learners who chose to reflect on the MPs in their course portfolios evaluated the instruction positively and most of them demonstrated an increase in their meta-pragmatic awareness.

Second, the first MP uses that emerged after instruction module 1 in the learners' discourse appeared to replicate the functions of the uses in the examples from their German partners writing presented to them during the instruction. In particular, the MPs *ja* and *mal* were used by several learners for mitigating the speech act of leave-taking. Additionally, the formulaic use of the MP combination *ja mal* for expressing an intention from the instruction example appeared to have drawn the attention of several learners who imitated its use in their subsequent chats and e-mails. This finding corroborates the hypothesis that formulaic sequences develop before free constructions in foreign language learners (Bardovi-Harlig, 2002; N. Ellis, 1996). However, the use of this formulaic combination as well as some other MPs was often inaccurate due to semantic and syntactic restrictions that did not become immediately apparent to the learners during the first instruction module. The learners' accuracy of performance improved after instruction module 3, the primary goal of which was fine-tuning of the nuances of the MPs' meaning and use. In future research it would be useful for our understanding of L2 development to explore whether the learners replicated the MP uses of their partners by emulation (learner use based on the product of the NSs' interactions), imitation (learner use based on the intentions of the NSs' interactions; see Tomasello, 1999, p. 30), or chance and, in the case of the former two, to examine the relationship of emulative or imitative uses to the conditions of the instructional modules.

Furthermore, the microgenetic analyses for the use of each individual MP retrieved from *Telekorp* in conjunction with the metapragmatic reflections of the learners in their final course portfolios reveal that each learner followed an idiosyncratic developmental path with respect to his or her pragmatic performance, awareness, as well as the relationship of these two aspects of pragmatic competence. For example, Carolyn started at a higher level of proficiency with respect to both performance and awareness than the other learners in the course; nevertheless, she also showed marked development of both of these aspects in the form of range of MP use, frequency of MP use, and accuracy of MP use. Michael benefited from being a legitimate peripheral participant (Lave & Wenger, 1991) in the same group as Carolyn and made considerable progress with regard to the range, frequency, and accuracy of MP use. His developmental path lends support to

the suggestion in Kinginger and Belz (2005, pp. 401–403) and Belz (2006, pp. 235–236) that the performance of more proficient class peers rather than NSs might be more salient to the learners and also foster their own development.

Kate and Angela's developmental paths illustrate the influence of positive rapport in intra-cultural group interactions. Such rapport is demonstrated by the fact that these women composed a great many of their e-mails in collaboration with one another. Their MP use developed noticeably with respect to both frequency and range as well as meta-pragmatic awareness as reflected in their impressive work as learners–researchers (Seidlhofer, 2002).

Microgenetic analysis helps reveal individual differences in the development of learners who produced a similar amount of the focal features. For example, one could falsely conclude that Kim, Kate, and Stephanie developed in a similar fashion because all of them produced 7–9 MPs in the post-intervention stage. However, close chronological tracking of these uses as well as consideration of the awareness data show that Kate's uses were evenly distributed with respect to time and MP range, Stephanie was waiting to use all but one of her MPs in the last chat despite her early developed awareness, and Kim developed with respect to frequency but not range because six of her seven uses were the MP *ja*. Analogously, one would be tempted to term the pragmatic development of Brian, Clarissa, Kelly, and Kurt as equally minimal because they produced only one to three MPs. However, Brian demonstrates a lot of progress in his postcourse portfolio with regard to both awareness and performance, whereas Clarissa only expresses a wish to use more MPs in the future, and Kurt uses an MP correctly but demonstrates lack of development concerning awareness in his metapragmatic narrative where he confuses the MPs with modal verbs.

Finally, the microgenetic analyses showed that there were no moments of peer assistance with respect to MP use. In other words, the German peers provided no feedback on the focal features even when explicitly requested to do so by the learners. This fact may be explained, in part, by the type of topic digression that is common in chat conversation (Herring, 1999). However, this finding is also in line with Barron's (2003, p. 84) remark about the scarcity of NS feedback, or "critical incidents," on learners' misuse or underuse of lexical downgraders (including MPs). NSs might not consider MPs important candidates for error correction in the presence of more salient inaccuracies (e.g., address form use as ascertained by Belz & Kinginger, 2003). This finding gives even more weight to the argument that it is necessary to explicitly teach the German MPs.

Conclusion

According to Kasper and Rose (2002, p. 263), focus-on-form (Long, 1991), or rather focus-on-form-and-function, is justified in teaching pragmatics "[a]s long as the metalinguistic information is embedded in meaningful activities, triggered by an actual learner problem, and teachable at the learners' current stage of interlanguage development." In our study, "the actual learner problem" was a drastic underuse of MPs by learners despite ample exposure to the focal feature in the NS discourse at the pre-intervention stage. The experimental design proved to be conducive to the development of pragmatic competence with respect to performance because the need for the focused instruction arose from a specific learner problem and because the learners could immediately apply the learned features in real-life interaction that is referred to as rare in the research literature by Kasper and Rose (2002; see, however, Billmyer, 1990; Wishnoff, 2000). Our results confirm DeKeyser's (2005) claim that CMC is "a good context for proceduralization" of acquired explicit knowledge, which is "the first step to fluency." In the current study, telecollaborative communication served as meaningful activity for practice.

A final point concerns the developmental nature of the study. We proffer that the current study is developmental not only because it examines diachronic data, but also because the instruction itself was delivered in successive stages and was sensitive to learners' changing use over time as tracked in the integrated corpus. Microgenetic analysis using such a corpus is a very effective means of establishing patterns of difference between NSs' and learners' language use *in the very same interactions.* Because the teacher–researcher does not need to search for or possibly construct an external NS comparison corpus, immediate comparisons of NS and learner productions can be conducted at various points in the context of telecollaborative foreign language education. Such analyses, in turn, enable the corpus-based design and administration of *developmental* pedagogical interventions. Again using the methods of microgenesis and contrastive learner corpus analysis, teachers can track learners' responses to the initial intervention *in vivo* and fine-tune their subsequent instruction in the face of the learners' on-going and/or emerging performance of the focal feature. As a result, teacher-researchers may develop teaching proposals for L2 pragmatic competence (and other components of the grammar) based on developmental studies, an area in both research and practice where Kasper and Rose (2002) notice a serious gap. As the data examined here reveal, learners will have diverse responses to instruction as with most other things

in life. The combination of microgenetic and contrastive corpus analysis allows the teacher-researcher to document precisely on an individual basis what those responses are and to offer, as a consequence, further individualized intervention (Coniam, 2004).

Notes

1 For more information on *Telekorp*, visit http://www.personal.psu.edu/faculty/j/a/jab63/Telekorp.html

2 All participant names given here are pseudonyms.

3 Parts of tables 1–3 have been published previously in Belz & Vyatkina (2005, pp. 26–29).

4 In the current contribution, we provide a comprehensive report on the microgenetic analysis of the performance and awareness data of all 16 learners. In Belz and Vyatkina (2005) and Belz, Vyatkina, and Hundley (in press), we report in more detail on varying aspects of the quantitative analysis as well as on the performance and awareness data for the top two learners in the cohort.

5 The development of Carolyn and Michael, the two most advanced learners in the course, is reported in detail in Belz and Vyatkina (2005).

6 Portfolio entries originally were written in German by the learners. Only the authors' English translations are provided here for space consideration.

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Appendix

In Tables 5 through 8 contained in this appendix, the following notations are used.

SW	semester week
I1	intervention module 1
I2	intervention module 2
I3	intervention module 3
E	e-mail
C	chat
bold names	learners
plain names	native speakers
bold numbers	learners' use of modal particle
plain numbers	native speakers' use of modal particle
underlined numbers	modal particle used in combination with another modal particle
italicized numbers	inaccurate uses
numbers divided by a semicolon	modal particle uses in different e-mails or chats during 1 week
numbers divided by a plus sign	modal particle uses in the same e-mail or chat

Table 5. Chronological use of *ja* by native speakers and learners per transatlantic group

SW	**8**		**9**		**10**		**11**		**12**		**13 (I1)**		**14 (I2)**		**15 (I3)**		**16**	
modality	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**
Group 1																		
Sibylle					1			1	1	1			1					
Annerose					1		1+1			1								
Dorothee								1										
Kelley							1									**2**		
Russell													**1**	***1***		**1**		
Group 2																		
Heidelinde						1			1	2		1						
Marina						1										1		
Angus																		
Jim																		
Group 3																		
Kaethe					1					1+3						1		
Lea					1	2	1	1		2		1						
Petra																		
Brian													**1; 1**					
Amy													**1+1; 1**		**1**			
Group 4																		
Baerbel				1	1		2								1			
Danica																		
Lili							2+1											
Corinne			2				1+1		2		2+3; 1							
Stephanie																**2**		
Kurt																		

Group 5																			
Ramona			1													2			
Emma			1+2				1												
Liane											1			1	1	1			
Carolyn							**1**	**1**		**1**				**2**		**2**			
Michael														**2**	**1**	**4**	**1**		
Group 6																			
Jette																			
Norma			2		2		1		1+1	1									
Karsten																1			
Angela													1; ***1;*** 1						
Kate													***1*+ 1**			**2**			
Group 7																			
Kristl									1		1		1				1		
Cassandra					1		1						2		2				
Sigrid			1		1		2					1			3				
Judy																			
Kim													**1**		**2+*1*; 1;1**				
Group 8																			
Cynthia						2													
Silja	1								1		1+1								
Timothy														**1**		**1**			
Clarissa														**1**					

Table 6. Chronological use of mal by native speakers and learners per transatlantic group

SW	8		9		10		11		12		13 (I1)		14 (I2)		15 (I3)		16	
modality	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**
Group 1																		
Sibylle									2	3								
Annerose							1			1								
Dorothee					1						3		1					
Kelly																		
Russell													***1***	**1**				
Group 2																		
Heidelinde			1					1			2							
Marina			1;2			1	1											
Angus																		
Jim																		
Group 3																		
Kaethe					1													
Lea							1											
Petra									1									
Brian														**1**				
Amy													***1***					
Group 4																		
Baerbel																		
Danica															1			
Lili			2				1				1					1		
Corinne			1								1							
Stephanie																**2**		
Kurt													**1**					

Group 5																		
Ramona													1					
Emma																1		
Liane																		
Carolyn			**1**									***2***		**2**				
Michael												***1***		***1***		**1**		
Group 6																		
Jette																		
Norma			1;2		1		1			1								
Karsten			1															
Angela									1									
Kate													***1***					
Group 7																		
Kristl																	1	
Cassandra							1											
Sigrid			1								1				1			
Judy																		
Kim																		
Group 8																		
Cynthia																		
Silja	1				1				1									
Timothy														***1*****+1**		**1**		
Clarissa														**1**				

Table 7. Chronological use of *denn* by native speakers and learners per transatlantic group

SW	**8**		**9**		**10**		**11**		**12**		**13 (I1)**		**14 (I2)**		**15 (I3)**		**16**	
modality	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**
Group 1																		
Sibylle					2													
Annerose								1		1	1							
Dorothee								1		1								
Kelly																		
Russell																		
Group 2																		
Heidelinde			2			1		1				2						
Marina											1							
Angus																		
Jim																		
Group 3																		
Kaethe																		
Lea				1		3												
Petra																		
Brian																		
Amy															***1*+2**	**1**		
Group 4																		
Baerbel																		
Danica			1															
Lili																		
Corinne																		
Stephanie																**3**		
Kurt																		

Group 5																			
Ramona												1	1						
Emma																			
Liane															1				
Carolyn												**1**				**1;1**			
Michael																**1**			
Group 6																			
Jette																3			
Norma				2															
Karsten																			
Angela													**1; 1**						
Kate													***1*+1;1**						
Group 7																			
Kristl									2										
Cassandra						1					1				1				
Sigrid			1;3;3		2		2		1		1	1			1				
Judy																			
Kim															**1**				
Group 8																			
Cynthia						1													
Silja																			
Timothy																***1***			
Clarissa																			

Table 8. Chronological use of *doch* by native speakers and learners per transatlantic group

SW	8		9		10		11		12		13 (I1)		14 (I2)		15 (I3)		16	
modality	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**C**	**E**	**E**
Group 1																		
Sibylle																		
Annerose										1								
Dorothee										1								
Kelly																		
Russell																		
Group 2																		
Heidelinde										1		1						
Marina			1			1												
Angus																		
Jim																		
Group 3																		
Kaethe										6						3		
Lea				1	1					1								
Petra									1									
Brian																		
Amy																		
Group 4																		
Baerbel																		
Danica																		
Lili																		
Corinne														1				
Stephanie														**1**				
Kurt																		

Group 5																		
Ramona								1		1		1		2				
Emma																		
Liane														1				
Carolyn														**2**		**1**		
Michael														**2**		***1+2***		
Group 6																		
Jette																		
Norma			1	1	1			2		2		2						
Karsten																		
Angela																		
Kate													**1**					
Group 7																		
Kristl			1		1		1		1	1								
Cassandra			1		1													
Sigrid																		
Judy																		
Kim																		
Group 8																		
Cynthia			1							1								
Silja					1													
Timothy																		
Clarissa																		