LEARNING OPPORTUNITIES AND OUTCOMES OF L2-L2 AND L2-HL LEARNER
INTERACTION DURING A COLLABORATIVE WRITING TASK

BY

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DISSERTATION

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ABSTRACT

Task-based pair work encompasses comprehensible input, negotiation of form and meaning, and modified output, thus affording learners with optimal opportunities for language learning. Specifically, exchanges in which interactants turn their attention to certain linguistic targets within meaningful interaction, called form-focused episodes (FFEs), are believed to promote language learning. A growing body of research on learner-learner interaction has shown that learners internalize the information discussed in FFEs, as measured by tailor-made posttests (Adams, 2006, 2007; LaPierre, 1994; Swain & Lapkin, 1998). However, there has been a mismatch to date between the meaning-based nature of the treatment tasks and the exclusively form-focused nature of the tailor-made posttests used to assess learning gains. Furthermore, research has focused almost exclusively on L2-L2 pairs, leaving aside the question of what happens when heritage language (HL) learners are involved.

This dissertation examines not only the connection between learner-learner interaction and language learning, but also whether learner linguistic background (L2, HL) plays a differential role in terms of both learning opportunities and outcomes. Learning opportunities were operationalized as the FFEs that arose in the task-based interaction of matched (L2-L2) and mixed (L2-HL) dyads, and learning gains were assessed through the incorporation of linguistic information from successfully resolved FFEs in immediate and two-week delayed post-treatment individual writing tasks. Participants were 24 L2 learners of Spanish (English native speakers) and 8 HL learners (bilingually-raised Spanish/English speakers) enrolled in the same intermediate Spanish course. Research questions were addressed by analyzing the audio-recorded interactions of 8 L2-L2 and 8 L2-HL dyads engaged in a collaborative writing task, as well as the texts produced by the learners during and after the treatment.

Results indicated that there were no differences between matched and mixed dyads in terms of the total number of FFEs, the frequency of preemptive and reactive FFEs, and the occurrence of morphosyntactic FFEs. By contrast, L2-L2 and L2-HL dyads differed with respect to frequency of orthographic and lexical FFEs and successful resolution of FFEs. Within mixed dyads, L2 and HL learners differed in terms of frequency of initiation of FFEs as well as the type of FFEs initiated. Nevertheless, both L2 and HL learners were able to correctly resolve FFEs equally as often. With regards to learning gains, L2-L2 dyads incorporated information from the FFEs in both the immediate and the delayed post-treatment individual writing tasks significantly more often than learners in L2-HL dyads. Within mixed dyads, L2 learners were more likely to use linguistic information provided by their HL peers than the other way around in the immediate post-treatment writing task. Overall, considering the greater learning gains of L2-L2 dyads and of L2 learners in L2-HL dyads, the data suggest that HL learners may not benefit from the interaction as much as their L2 counterparts, although benefits are not entirely one-sided in favor of L2 learners.

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CHAPTER 1: THE OUTPUT HYPOTHESIS

1.0 Introduction

The overarching goal of this dissertation is to examine the connection between learner-learner interaction and language learning. Furthermore, this investigation sheds light on the role of learner linguistic background (L2, HL) in terms of both learning opportunities and outcomes. Following previous research on interaction-driven SLA, learning opportunities were operationalized as the form-focused episodes that arose in the task-based interaction of matched (L2-L2) and mixed (L2-HL) dyads. Learning outcomes were assessed in terms of the learners' ability to use linguistic information provided by their interlocutors in subsequent individual writing tasks.

There is vast theoretical support for a connection between interaction and learning, ranging from sociocultural theory (Vygotsky, 1978) and cooperative learning theory (Johnson & Johnson, 1975), to the interaction hypothesis (Long, 1996) and the output hypothesis (Swain, 1985, 1995, 2005). Although the focus of sociocultural and cognitivist approaches may appear to be radically different, both perspectives are concerned with how interaction might facilitate language learning as interlocutors provide assistance to each other. However, a Vygotskian approach explores how learning may be affected by the social intricacies of collaborative work, such as contextual factors and discourse functions. A cognitivist approach, on the other hand, "takes a more psycholinguistic perspective, considering as its primary objective the understanding of how learning takes place, dealing with explanations such as the role of attention" (Gass, 2004, p. 597). For instance, both the interaction hypothesis (Long, 1996) and the output hypothesis (Swain, 1985, 1995, 2005) are concerned with ways to increase the likelihood that learners' attentional resources will be directed towards form, thus promoting

language acquisition. Considering that the goal of the present study is to evaluate learning opportunities and outcomes as students engage in a collaborative written production task, the tenets of the output hypothesis (Swain, 1985, 1995, 2005) provide an ideal theoretical framework to guide this investigation.

I will first present an overview of the historical context in which the output hypothesis was first proposed; then, I will discuss the theoretical underpinnings of the output hypothesis, specifically the insufficiency of input and the need for attention to form; and lastly, I will delineate the roles of output in fostering language learning.

1.1 Historical context of the output hypothesis

The output hypothesis was first proposed by Merrill Swain in 1985, when the prevalent view in the field of second language acquisition (SLA) was Krashen's monitor model. Influenced by the characteristics of first language acquisition, Krashen (1982, 1985) proposed a five-hypothesis model that attempted to account for how a second language is acquired. Krashen's basic premise was that comprehension of input that contains structures one stage beyond the learner's current level of competence ($i+1$) is all that is needed for acquisition. Furthermore, Krashen (1980) argued that acquisition occurs when "the acquirer is focused on the meaning and not the form of the utterance" (p. 170). In fact, Krashen's model negates the need for conscious attention to form in SLA, as such a focus was believed at the time to lead only to learning, which Krashen saw as being completely separate and distinct from acquisition. According to Krashen, only acquired knowledge could be used for spontaneous production; learned knowledge served only to enable the learner to edit, or monitor, his or her language use. The learning/acquisition distinction has been heavily criticized for being both vaguely defined and difficult to support empirically (Ellis, 1992; Gregg, 1984; McLaughlin, 1987).

In contrast with the prominent role that Krashen's model gave to comprehension, production was believed to be merely a reflection of what the learner had acquired. In other words, output was in no way involved in the process of acquisition, but rather it represented the product of it. Thus, native-like competence could be attained, at least theoretically, without any language production. The only benefit of engaging in conversation, according to Krashen, was to obtain comprehensible ($i + 1$) input from a more competent interlocutor. However, Swain (1985) argued that "the role of these interactional exchanges in SLA may have as much to do with comprehensible output as it has to do with comprehensible input" (p. 236). She pointed out that even though comprehensible input led to native-like comprehension skills, the same did not hold true for production abilities. In light of this, Swain (1985) pioneered a shift in the perception of output, so that it was no longer seen as the product of acquisition but rather as an integral part in the process of acquisition, and she suggested that learners would benefit from "being pushed toward the delivery of a message that is not only conveyed, but that is conveyed precisely, coherently, and appropriately" (Swain, 1985, p. 249). The 'comprehensible output hypothesis', as the output hypothesis was first called, put forth the importance not only of output but also of attention to form in SLA, in a way extending the concept of $i + 1$ to $o + 1$.

1.2 Foundations of the output hypothesis

1.2.1 The insufficiency of input

Among theories of SLA, there is extensive consensus that comprehensible input is necessary for successful language acquisition. Exposure to the target language, in spoken and/or written form, provides the positive evidence on the basis of which learners construct their developing grammars. Without positive evidence, learners would not be able to formulate any possible hypotheses about how the target language works (Gass, 1997). Although necessary,

input has been shown to be insufficient for attaining native-like competence (White, 1987; Swain, 1985). Specifically, positive evidence allows learners to confirm only those hypotheses about what is possible in the target language, but a complete L2 grammar also includes rules about what is not permissible. As White (1987) argued, in the process of second language acquisition, learners might incorrectly assume certain similarities between their native language and the L2, and input alone "cannot fight off the effects of the L1" (p. 105). For example, a native speaker of Spanish learning English as a second language could hypothesize, based on positive evidence alone, that adverb placement is free in both languages, when in reality English does not allow adverbs to appear between the verb and its direct object.

Further evidence that input alone falls short of promoting native-like competence is that even after years of abundant comprehensible input, non-targetlike features may still be present in the learners' output. Strong empirical evidence of this comes from Canadian immersion programs, in which students attain native-like comprehension skills, but "in their speaking and writing, they are clearly identifiable as non-native speakers and writers" (Swain & Lapkin, 1995, p. 372). Swain attributed the non-targetlikeness of the production of French immersion students to the type of instruction they were receiving. Classroom observations revealed an input-rich instructional environment, with "limited opportunities for extended output where linguistic accuracy was demanded" (Swain, 1998, p. 66). This evidence led Swain (1985, 1995) to argue that comprehensible input alone is insufficient to foster L2 development and thus should be complemented with meaningful language production.

Swain's (1985, 1995, 2005) claim hinges on the fact that comprehension and production skills differ greatly in the kind of processing they require. While comprehension may be achieved by relying on shallow, semantic processing, language production forces learners to

engage in much deeper, syntactic and morphological processing. That is, when reading or listening, learners may choose to ignore or avoid decoding much of the morphosyntactic information that may not contribute directly to inferring meaning (e.g., gender marking, aspect and mood morphology, clitics, prepositions, etc.), but they would still be able to comprehend the message accurately. However, circumventing all morphosyntactic processing is not possible when trying to accurately produce a comprehensible message. For example, it is possible for a learner to correctly interpret the sentence "A Juan le gusta el béisbol" ('Juan likes baseball') relying only on semantic information and plausibility, rather than processing the complex morphosyntactic makeup of this construction, such as the indirect object marking 'a', the mandatory doubling of the indirect object clitic, and the OVS word order. When producing the same sentence, on the other hand, learners are forced to encode that morphosyntactic information into their message because omitting it would result in a non-targetlike utterance: *"Juan gusta el béisbol".

1.2.2 The need for attention to form

Counter to Krashen's (1985) claims that acquisition takes place subconsciously and without attention to form, Swain (1985) maintained that focusing learners' attention on grammatical accuracy in a communicatively oriented environment fosters L2 development. Even though both Krashen and Swain acknowledge that not all input becomes intake, they differ in what determines which linguistic information is extracted from the input and stored in long-term memory. Swain's view is in line with Schmidt's (1990) proposal that "paying attention to language form is hypothesized to be facilitative in all cases, and may be necessary for adult acquisition of redundant grammatical features" (p. 149).

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Schmidt (1990, 2001) distinguishes between two levels of conscious attention or awareness: noticing and understanding. Noticing, in the sense of registering the occurrence of "elements of the surface structure of utterances in the input" is necessary for SLA, whereas understanding, in the sense of analyzing and recognizing "abstract rules or principles of which such instances may be exemplars," is not required for acquisition to take place (Schmidt, 2001, p. 5). Thus, it is impossible to learn forms that have not been noticed in the input, but it may be possible for some learning to occur without understanding the underlying rule. Nonetheless, in Schmidt's view, the higher level of awareness, at the level of understanding of principles or rules may be facilitative for deeper learning, as it directly relates to the organization and restructuring of the learner's developing interlanguage. Several studies have lent empirical support for Schmidt's Noticing Hypothesis. For example, Leow (1997, 2000) found that learners who demonstrated noticing verb forms at the level of understanding exhibited the greatest learning gains, as measured by recognition and production posttest tasks. Similarly, Mackey's (2006) results revealed "a relationship between noticing and learning for question formation" (p. 422), as shown by the fact that the majority of learners who reported noticing improved over time, whereas those learners who reported little to no noticing made no development over time.

1.3 Overview of the output hypothesis

In light of the insufficiency of input and the need for attention to form to attain native-like proficiency, Swain's output hypothesis (1985, 1995, 2005) proposes that oral and/or written language production in a meaningful yet accurate way "facilitates second language learning in ways that are different from, or enhance, those of input" (Swain & Lapkin, 1995, p. 371). Swain's proposition never intended to account for all of language acquisition, nor does it claim that output guarantees (or, in the words of Krashen, 'causes') acquisition. The premise of the

output hypothesis is that the processes in which learners engage when 'pushed' to produce an accurate message are facilitative of L2 development.

It is important to point out that not all language production tasks are created equal: some are more conducive to language learning than others. In fact, the description of the output hypothesis is oftentimes accompanied by the caveat "under some conditions," which alludes to the fact that the extent of the benefits of each of the functions of output may be dependent upon task conditions, especially modality and availability of feedback.

1.3.1 The role of task modality within the output hypothesis

While the output hypothesis (1985, 1995, 2005) does not differentiate between oral and written production, numerous scholars have suggested that writing tasks may be more effective at drawing the learners' attention to form, and as such provide more language learning opportunities, than purely oral tasks (Adams, 2006; Adams & Ross-Feldman, 2008; Cumming, 1990; Williams, 2008). In fact, the majority of studies that show support for the output hypothesis have utilized tasks that included a written component, such as picture narration and dictogloss[1] (Kowal & Swain, 1994; LaPierre, 1994; Swain & Lapkin, 1995, 1998, 2001).

The most frequently cited and perhaps most obvious advantage of written production over oral production in promoting orientation to form lies in the fact that writing allows for greater processing time than speaking. As Cumming (1990) stated, there is "a natural disjuncture between written text and the mental processes of generating and assessing it" (p. 483). That is, learners engaged in writing have more time to engage in metalinguistic analysis and monitor their own production by consciously reflecting on the target language not only before producing

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[1] All studies conducted within the framework of the Output Hypothesis have included only instructed, literate learners. Presumably, uninstructed learners would not be as prone to focus on form as instructed learners during an oral output task.

it but also afterward. In an oral production task, learners may still monitor their own language production to an extent, but the fleeting nature of oral communication makes it much more difficult for them to compare their own production with either their peer's production or other sources of target-like input. Likewise, the concreteness of written production, as opposed to the ethereal quality of speech, might increase the saliency of forms, and thus, learners might be more prone to notice them. Even though learners may also notice gaps in their own or their interlocutor's interlanguage when speaking, they might be more inclined to ignore or circumvent problems to avoid interrupting the flow of communication.

1.3.2 The role of feedback within the output hypothesis

Since the output hypothesis is mainly concerned with the internal processes that are triggered when a learner attempts to produce language, it does not explicitly make any claims about the role of external feedback on production. As Swain and Lapkin (1995) remark, "the output hypothesis (stripped to its bare bones) is that even without implicit or explicit feedback provided from an interlocutor about the learners' output, learners may still, on occasion, notice a gap in their own knowledge when they encounter a problem in trying to produce the L2" (p. 373). Thus, the most basic claims about the cognitive benefits of output would hold true regardless of whether feedback on production is forthcoming or not.

However, Swain and her colleagues do not discount the facilitative role of feedback in SLA. Swain and Lapkin (1995) indeed acknowledge that feedback could prevent learners from generating incorrect solutions or hypotheses about the target language. One of the benefits of production is precisely that it affords learners the opportunity to receive either direct or indirect cues from an interlocutor about the correctness of the message (Long, 1996). Corrective feedback is an effective way to alert learners of mismatches between their production and the

target language, which would in turn enable them to make the appropriate form-meaning connections. Extensive research on the role of feedback, especially during oral interaction, has consistently shown its beneficial impact on learning (Li, 2010; Russell & Spada, 2006).

Still, while Long (1996) stresses the importance of immediate feedback that is given in reaction to an ungrammatical utterance within meaningful interaction, Swain (1985, 1995, 2005) never specifies when or how feedback should be provided. When learners notice a problem in their production, they may try to find a solution "by turning to a dictionary or grammar book, by asking their peers or teachers, or by noting to themselves to pay attention to future relevant input" (Swain, 2000, p. 100). In other words, the benefits of output are not necessarily limited to collaborative settings or dependent upon immediate interactional feedback. Nonetheless, collaborative language production tasks may serve to enhance the cognitive functions of output, as discussed in the following section.

1.3.3 Functions of output

Swain (1995, 2005) specifies three important ways in which output benefits L2 learners: first, it compels them to notice what they do not know or what they only know partially about the target language; second, it allows them to test their interlanguage hypotheses; and third, it encourages them to consciously reflect on language use.

1.3.3.1 Noticing

In the process of producing language, learners are confronted with having to assign a specific form to the intended meaning, and in doing so, they will inevitably become aware of the extent of their knowledge about the target language. Thus, the consciousness-raising role of output consists of making learners aware of problems in their interlanguage. They may either notice deficiencies (i.e., what they do not know how to say), referred to in the literature as

"noticing holes" (Doughty & Williams, 1998, p. 228), or they may notice a mismatch between their interlanguage and the target language, which is what Schmidt and Frota (1986) called "noticing the gap". Both of these cognitive processes are considered necessary for L2 development, given that they sensitize learners to the occurrence of particular forms in future input, thus increasing the likelihood of it becoming intake. The following dyadic exchange from the present study illustrates two instances in which learners notice a hole in their knowledge while attempting to produce a written narrative.

Example 1:

(L2)S44   *El chico… ¿cómo se dice* fishing?
            The boy… how do you say fishing?

(L2)S123   *pescar*
            to fish

(L2)S44   oh, yeah! *Pescar, sí*
            oh, yeah! To fish, yes

(L2)S123   *el chico está pescando y algo muy grande*…um… like… to bite?
            the boy is fishing and something very big… um… like… to bite?

(L2)S44   *no sé cómo se dice* bite
            I don't know how to say 'bite'

In this excerpt, when S44 realizes she is not able to retrieve the Spanish word for "fishing" in order to convey what she wants to say, she seeks assistance from her partner. According to the output hypothesis, this realization –triggered by meaningful production- constitutes a crucial cognitive process for L2 development, as the learner would be primed to notice the occurrence of that word in subsequent input. Indeed, when her partner provides a targetlike solution (*pescar*), S44 enthusiastically agrees (*oh, yeah! Pescar, sí*). On the other hand,

when S123 notices a 'hole' in her interlanguage (*um… like…to bite?*) and seeks assistance from S44, her partner is not able to assist her. Nonetheless, according to the output hypothesis, by becoming aware of this particular problem in their interlanguage, both learners are presumably more sensitive to the occurrence of the verb 'to bite' in future input. Of course, since it is possible that learners might never encounter the targeted form in future input, unresolved episodes, like the one about the verb 'to bite', are obviously not as effective in promoting L2 learning as successfully resolved episodes, like the one about the verb 'to fish'.

Even though learners may also notice gaps or holes in their own knowledge during individual language production (Cumming, 1990; Suzuki, 2008; Swain & Lapkin, 1995), collaborative output tasks increase the likelihood that learners will realize what they do not know because, in addition to noticing their own gaps, their linguistic shortcomings may also be pointed out by their interlocutors. The excerpt in example 2 below serves to illustrate this phenomenon. Two learners from the present study were trying to narrate a part of the story where the characters realize that it was not a fish but rather a turtle that had grabbed their fishing line.

Example 2:

(L2)S48 *estaban…eh… nadando…*
    they were…eh…swimming…

(HL)S12 Yeah.

(L2)S48 *…y realizar que,* er, *realizaron…*
    …and to accomplish that, er, they accomplished…

(HL)S12 *Se dieron cuenta de. No realizaron.*
    They realized. Not accomplished.

(L2)S48 *Sí.*
    Yes

(HL)S12 *…que una tortuga había agarrado el* fishing rod.
    …that a turtle had grabbed the fishing rod.

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In this case, S48 produces a lexical error which stems from the fact that the Spanish verb *realizar* is a false cognate: it does not mean 'to realize' but rather 'to do, to accomplish'; the verbal phrase *darse cuenta de* is the Spanish equivalent of 'to realize'. When S12 notices this mismatch between the target form and her partner's production, she explicitly corrects her ("*Se dieron cuenta de. No realizaron*"). S48 acknowledges the correction, and S12 subsequently proceeds with the narration of the story. Presumably, if S48 had been working by herself, she might not have noticed this 'gap' in her interlanguage.

1.3.3.2 Hypothesis testing

When learners notice a 'gap' or a 'hole' in their interlanguage, they engage in linguistic problem-solving: they try to work out the best possible solution that will allow them to convey the intended message. In doing so, they experiment with different linguistic forms, which represent the learners' current hypotheses about how the target language works. In this manner, output fosters acquisition by providing learners with the opportunity to test their interlanguage hypotheses. Written production tasks may be especially conducive to hypothesis testing, given that learners are more likely to introduce new forms in writing than in spontaneous conversation (Hubert, 2009; Weissberg, 2000). As learners try out different forms, they may modify their output as a result of self-monitoring or their interlocutor's feedback, thus confirming or rejecting their hypotheses. Evidence that hypothesis testing has taken place may be found, for instance, in the occurrence of uptake following interactional feedback. Example 3 below illustrates how two learners in this study engage in hypothesis testing, as they rehearse different forms until reaching a target-like resolution.

Example 3:

(L2)S104 *caminaba cuando… eh…*
      (he) was walking when…eh…

(L2)S170 *la tortuga…¿ca- caiga? Or… caer…*
      the turtle… fa-fall? Or… to fall…

(L2)S104 *¿caigó?*
      falled?

(L2)S170 no

(L2)S104 *¿se cayó?*
      fell?

(L2)S170 *¡se cayó!*
      fell!

In this case, output leads one of the learners (S170) to become aware of a problem in her interlanguage: she is unsure of the past tense conjugation of the verb *caer* ('to fall'). This triggers a problem-solving exchange between the learners, in which two hypotheses are tested. First, her interlocutor suggests a non-targetlike form (*caigó*), but that hypothesis is rejected. It is possible that S170 has partial knowledge of the target form, and even though she is unable to provide it, she knows at the very least that *caigó* is not correct. The second hypothesis proposed by S104 (*se cayó*) is the target form, and S170 is able to identify it as such.

Although this function of output might appear to be dependent upon the provision of feedback, Swain (1995) makes it a point to clarify that the fact "that immediate feedback may not be facilitative or forthcoming does not negate the value of having experimented with their language resources" (p. 132). Indeed, learners might rehearse new forms on their own and test hypotheses against their existing knowledge. Self-repair in oral production, as well as self-revisions in writing serve as evidence that hypothesis testing may take place even in the absence

of feedback (Swain & Lapkin, 1995; Suzuki, 2008). For instance, when a dyad in the present

study was trying to say "the boy gets ready to leave" in Spanish, one of the learners verbalized,

rejected and modified his own hypotheses without any external cues from his interlocutor.

Example 4:

(L2)S126   *y el chico…preparar… a…* how do you, *cómo se dice*, like… you wouldn't
            say *preparar para*, that would be ridiculous. Would you say *preparar* and
            then just put this? I think so. Or maybe *preparar a*. Maybe that's it.
            and the boy… gets ready…to… how do you, how do you say, like... you
            wouldn't say 'to get ready for', that would be ridiculous. Would you say
            'to get ready' and then just put this? I think so. Or maybe 'to get ready to'.
            Maybe that's it.

(L2)S169   OK

The original suggestion of S126 (*preparar a*) represents what he hypothesized to be correct, yet

he considers an alternative hypothesis (*preparar para*). He immediately rejects the first one,

presumably based on how it sounds to him ("*that would be ridiculous*"), and instead he proposes

a new hypothesis: *preparar* + infinitive. He is initially in favor of his own most recent proposal

("*I think so*"), but in the end he rejects it in favor of his initial suggestion (*preparar a*). His

partner, S169, merely agrees to use the preposition *a* ('to') in the written narrative but does not

provide any specific cues as to whether any of S126's hypotheses were correct or incorrect. This

example shows how the cognitive process of hypothesis testing may occur independently from

the availability of feedback. Nevertheless, it also demonstrates that feedback could be useful to

avoid incorrect hypotheses and less targetlike outcomes. The reasoning of S126 was actually

faulty: the verb *prepararse*[2] ('to get ready') in Spanish is followed by the preposition *para*

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[2] In Spanish, there is a semantic difference between *preparar* (to prepare) and *prepararse* (to get
ready). It could be argued that S126's reasoning was faulty throughout the entire process given

('for'). The learner considered the targetlike preposition *para* at one point but erroneously

rejected it, thus reaching a less targetlike resolution (*preparar a*). Although collaborative output

tasks are thought to facilitate the process of hypothesis testing by increasing the likelihood of

reaching a more targetlike resolution, feedback may not always be provided, especially in the

case of learner-learner interaction, as was the case in example 4. I will return to the issue of

incidence of feedback in learner-learner interaction in the next chapter.

1.3.3.3 Metalinguistic reflection

As learners work out possible solutions to the problems they encounter during

meaningful output tasks, they have the opportunity of "using language to reflect on language

produced by others or the self" (Swain, 2005, p. 478). The importance of metalinguistic

reflection for SLA is related to Schmidt's (1990) distinction between the two levels of

awareness: noticing and understanding. Conscious reflection on language may be viewed as a

manifestation of the "higher level" of awareness as understanding, which is thought to facilitate

language learning. In fact, several studies found that verbalization of metalinguistic comments

was associated with better performance on post-treatment tasks (Leow, 1997; Qi & Lapkin,

2001; Sachs & Polio, 2007).

It is important to point out that metalinguistic reflection may occur with or without the

assistance of an interlocutor. Through think-aloud protocols, several studies have shown that

learners working on individual writing tasks also reflect on language as they monitor their

production (Cumming, 1990; Suzuki, 2008; Swain & Lapkin, 1995). For example, while writing

a letter, one of the learners in Cumming's (1990) study stated "I'll put the present perfect

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that he did not use the pronominal form of the verb. However, the hypotheses tested revolved
around the issue of the preposition that followed the verb, rather than the verb itself. Therefore,
the targetlikeness of S126's reasoning is determined according to which preposition he used.

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because I think we still learn about this thing" (p. 497). The reflective function of output appears to be, then, more dependent on task modality than on interaction, with written tasks being more effective than oral tasks at encouraging learners to focus on form.

Nonetheless, metalinguistic reflection has been shown to occur more frequently in collaborative than individual tasks (Suzuki, 2008). In fact, Cumming (1990) acknowledges that episodes of metalinguistic reflection were very infrequent in his think-aloud data. It seems logical for learners to be more likely to provide or seek explanations about language use when working with a peer than by themselves. The following exchange between two learners in this study serves as an example of collaborative reflection on linguistic form. This particular episode revolves around the use of the differential object marker (DOM).

Example 5:

(L2)S77	*ellos vieron a la tortuga y estaban muy enojados* they saw DOM the turtle and they were very mad
(L2)S95	*creo que no es un a es necesario… ellos vieron la tortuga* I think it is not an 'a' is necessary… they saw the turtle
(L2)S77	*ellos vieron a la tortuga… qué?* they saw DOM the turtle… what?
(L2)S95	*no creo necesito un "a"* I don't think I need an 'a'
(L2)S77	*creo que sí porque*, like, *cuando es dos, eh… sujetos… y eh… necesito el "a"* to distinguish who is doing what I think so because, like, when it's two…eh…subject…and eh… I need the 'a' to distinguish who is doing what
(L2)S95	oh! ok

In this excerpt, S95 proposes a less targetlike correction (deleting the DOM) to a grammatical sentence her partner has written ('they saw DOM the turtle'). In response, S77 not only brings to her partner's attention that the DOM is indeed necessary, but also offers the

underlying reason for it: 'to distinguish who is doing what'. Even though her explanation is somewhat rudimentary, it refers to the fact that direct objects that are animate[3] and specific need to be marked with the DOM '*a*' to avoid any potential ambiguity as to who saw whom (e.g., *el chico vio a la tortuga* would mean 'the boy saw the turtle', whereas *al chico lo vio la tortuga* would be 'the turtle saw the boy'). Her partner, then, is able to both notice and understand the mismatch between what she hypothesized to be correct and the target form. Presumably, this kind of metalinguistic reflection and negotiation leads to deeper learning than if the learner had just provided her partner with the correct form.

1.4 Form-focused episodes in collaborative dialogue

　　Interactional exchanges in which learners notice a gap or a hole in their interlanguage and subsequently engage in problem-solving constitute what Swain (2000) calls collaborative dialogue. As learners work together to fill their linguistic gaps or holes, they are co-constructing knowledge, which may in turn "become a tool for their further individual use of their second language" (Swain, 2000, p. 104). A number of studies have shown that learners indeed retain linguistic information provided by their peers during the course of collaborative dialogue (Adams, 2006, 2007; Bitchener, 2004; LaPierre, 1994; Swain & Lapkin, 1998; Williams, 2001). Research on learner-learner interaction is reviewed in detail in the next chapter.

　　Central to the construct of collaborative dialogue is the concept of language-related episodes (LREs), which have also been referred to as form-focused episodes (FFEs). FFEs constitute "a brief, spontaneous focus on a linguistic item within the context of a meaning-focused task" (Loewen, 2005, p. 363). FFEs are believed to be the sites where learning is likely

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[3] In this particular example, the direct object is an animal, and the DOM is optional with animal direct objects in Spanish (Aissen, 2003). It is possible that if the object had been a human being, the need to include the DOM would have been clearer for both learners, given that the DOM is obligatory with human-specific objects, but not so with animal-specific objects.

to occur, as they provide learners with the opportunity to turn their attention to specific linguistic targets within meaningful interaction, following Long and Robinson's (1998) definition of Focus on Form. Furthermore, as Williams (1999) and Ellis, Basturkmen, and Loewen (2001b) point out, FFEs do not refer only to episodes in which grammatical issues are discussed, but rather any point in the interaction in which any aspect of language (e.g., semantics, morphology, syntax, phonology, orthography, etc.) is under scrutiny. Although any instance in which learners implicitly or explicitly question their own language use is considered an instance of learner-generated attention to form, Williams (2001) makes an important distinction between mere attention to form and an FFE or LRE: "someone has to respond to it in order for an LRE to ensue" (p. 329). Therefore, examples 1,2,3, and 5 above constitute FFEs, whereas example 4 does not since it does not involve any negotiation between the learners.

Ellis et al. (2001a, 2001b) also make an important distinction between two types of FFEs: preemptive or reactive. On the one hand, a preemptive FFE "consists typically of exchanges involving a query and response," and it "addresses an actual or a perceived gap in the students' knowledge" (Ellis et al., 2001b, p. 413). In the case of learner-initiated focus on form, preemptive FFEs are requests for assistance. For instance, in example 1 above there are two cases of preemptive FFEs revolving around lexical issues: one of the preemptive FFEs is initiated by S44 ('*¿cómo se dice* fishing?'), and the other one is initiated by S123 ('...um... like... to bite?'). On the other hand, a reactive FFE "arises when learners produce an utterance containing an actual or perceived error, which is then addressed usually by the teacher but sometimes by another learner" (Ellis et al., 2001b, p. 413). In other words, exchanges involving corrective feedback, be it implicit or explicit, constitute reactive FFEs. The excerpts in examples 2 and 5 above fall under the category of reactive FFEs. In the case of example 2, the reactive

FFE initiated by S12 is triggered by an actual error in her partner's utterance, whereas in

example 5, the correction proposed by S95 is in reaction to a perceived error (i.e., the learner

thought the use of '*a*' in her interlocutor's utterance was incorrect, when it actually was correct).

The occurrence of both types of FFEs has been documented in teacher-learner interaction (Ellis,

et al., 2001a; Farrokhi & Gholami, 2007; Loewen, 2005) as well as in learner-learner interaction

(Williams, 2001; Zhao & Bitchener, 2007). However, previous research has not conclusively

determined whether one type of FFEs is more effective than the other in terms of promoting L2

learning, as discussed in the next chapter.

CHAPTER 2: INTERACTION AND LANGUAGE LEARNING

2.0 Introduction

The overall positive effects of interaction have been well-documented in the SLA literature (e.g., de la Fuente, 2002; Doughty & Varela, 1998; Ellis & He, 1999; Gass & Varonis, 1994; Leeman, 2003; Lyster & Ranta, 1997; Mackey, 1999; Mackey & Philp, 1998; McDonough, 2005; Muranoi, 2000; Swain & Lapkin, 1998). Interacting in the target language provides learners substantial amounts of comprehensible input and output through negotiation of meaning, thus affording them with optimal opportunities for language learning. In fact, two recent meta-analyses found large effect sizes on production measures for interactionally modified input, suggesting that task-based interaction fosters both grammatical and lexical development (Keck, Iberri-Shea, Tracy-Ventura, & Wa-Mbaleka, 2006; Mackey & Goo, 2007).

The majority of studies that have empirically shown a relationship between interaction and L2 learning have focused on non-native speakers (NNS) interacting with native speakers (NS). This is likely due to the fact that Long's interaction hypothesis specifically refers to "the interactional adjustments by the NS or more competent interlocutor" as being facilitative of acquisition (p. 452). Nonetheless, a growing body of research on NNS-NNS interaction has noted that, despite some important differences between NS-NNS and NNS-NNS interaction, interaction between learners is also effective in promoting L2 learning (Adams, 2006, 2007; Bitchener, 2004; LaPierre, 1994; Leeser, 2004; Swain & Lapkin, 1998; Williams, 2001).

Given the vast base of empirical research on the interaction hypothesis, a thorough review of studies that have tested its claims is beyond the scope of this dissertation. In this chapter, I will first focus on NS-NNS interaction studies that investigated the occurrence of preemptive and reactive FFEs, as they are relevant to the present study, and then I will turn to

studies that examined the dyadic interactions of L2 learners interacting with other L2 learners and with heritage language (HL) learners.

2.1 Teacher-learner interaction

NS-NNS interactions in the L2 classroom are reflected in the form of teacher-learner interaction. Several studies have found that within this interactional pattern, both teachers and learners initiate FFEs, but there are differences in the type of FFEs they tend to initiate: reactive FFEs are almost exclusively teacher-initiated, whereas most preemptive FFEs are initiated by learners (Ellis et al., 2001a; Farrokhi & Gholami, 2007; Loewen, 2005; Zhao & Bitchener, 2007).

In a descriptive classroom-based study, Ellis et al. (2001a) examined the occurrence of preemptive and reactive FFEs in teacher-learner interactions during 12 hours of meaning-focused instruction. The students were 24 intermediate adult learners of English as a Second Language (ESL) in a private language school in New Zealand. Instruction consisted of a form-focused grammar lesson followed by a series of communicative activities, such as role-play activities, information gap tasks, and group discussions. The researchers examined only the FFEs that arose during the communicative activities and excluded those that occurred during the form-focused portion of the lesson. FFEs were identified and coded as either teacher-initiated reactive, teacher-initiated preemptive, or student-initiated preemptive. Learning was operationalized in terms of successful learner uptake, defined as a learner's indication of comprehension or correct production of a particular linguistic feature after having demonstrated a gap in his or her knowledge. Thus, an uptake move could occur immediately following teacher-initiated reactive feedback as well as after receiving an answer to a student-initiated preemptive inquiry. Results revealed that approximately half of the 429 FFEs analyzed consisted of corrective feedback

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provided by the instructor, which led to successful uptake 75% of the time. In terms of

preemptive FFEs, 80% of them were learner-initiated and only 20% were teacher-initiated.

Uptake of preemptive FFEs occurred significantly more frequently when the focus on form was

learner-initiated (83%) rather than teacher-initiated (26%). The authors attribute this difference

to the fact that student-initiated requests for assistance arise when there is an actual gap in their

interlanguage, whereas teacher-initiated preemptive FFEs might not necessarily target forms that

are problematic for learners. With respect to the linguistic focus of the FFEs, there were no

significant differences: morphosyntactic and lexical FFEs were equally likely to result in

successful uptake.

Even though Ellis et al. (2001a) did not directly compare the effectiveness of preemptive

and reactive FFEs, results showed that successful uptake was most frequent after learner-initiated

preemptive FFEs, though teacher-initiated reactive FFEs also promoted uptake quite frequently.

Ellis et al. (2001b) suggested that "preemptive FFEs may be more effective than reactive FFEs"

(p. 429) because teachers tend to provide more explicit information (e.g., metalinguistic

explanations or lexical definitions) in response to learners' inquiries, whereas most reactive FFEs

consist of implicit forms of feedback, such as recasts (Ellis et al., 2001a; Loewen, 2005; Lyster

& Ranta, 1997). It is undeniable that learner-initiated preemptive FFEs elicit feedback that is

always consciously noticed by the learners. In contrast, corrective feedback (i.e., reactive FFEs)

is not always perceived as such, as shown by Mackey, Gass, and McDonough (2000). If noticing

is necessary for L2 learning, as Schmidt (2001) argued, it is reasonable to hypothesize that

learners may benefit more from preemptive rather reactive FFEs. While this proposition is

theoretically sound, no studies to date have provided empirical evidence to support an advantage

for learner-initiated preemptive focus on form in promoting learning gains.

On the contrary, Farrokhi and Gholami (2007) found the opposite pattern in their small-scale study of 12 intermediate ESL learners in Iran. The researchers analyzed the occurrence of incidental focus on form during 20 hours of teacher-learner interaction. The classes observed included both meaning- and form-focused instruction intended to prepare learners for the International English Language Testing System (IELTS) exam. Unlike Ellis et al. (2001a), uptake was found to occur more frequently in teacher-initiated reactive FFEs (62.6%) than in preemptive FFEs (37.4%), although the overall rate of uptake was quite low (15%). The results from this study also differed from Ellis et al.'s (2001a) findings in that there were significantly more teacher-initiated than learner-initiated preemptive LREs. Farrokhi and Gholami (2007) attributed this difference in part to cultural differences regarding classroom conduct: "Iranian adult EFL learners tend to shun away from asking too many questions" (p. 79). Moreover, given that the objective of the course was to prepare students to take a standardized test, it is possible that instructors were highly motivated not only to provide copious amounts of feedback but also to 'test' students' knowledge through preemptive queries. The high frequency of teacher-initiated FFEs may have in turn circumvented most learner-initiated requests for assistance. It is perhaps not surprising that in such a teacher-centered instructional environment, teacher-initiated reactive FFEs led to uptake moves more frequently than preemptive FFEs.

Nevertheless, neither Ellis et al. (2001a) nor Farrokhi and Gholami (2007) provide an answer to the question of which type of FFE leads to greater learning gains, given that the occurrence of uptake does not necessarily mean that acquisition has taken place. Loewen (2005) addressed this issue by incorporating tailor-made posttests to measure learning gains from interaction. Participants were 118 adult learners of ESL that ranged in proficiency from low to high-intermediate. FFEs that arose during in-class communicative activities were coded for

several factors, including type, linguistic focus, directness, and uptake. Tailor-made posttests contained discrete-point questions that targeted the specific linguistic items discussed in the FFEs. Half of the FFEs were included in the immediate posttest, which was administered 1 to 3 days after the interactive tasks; the other half of the FFEs was included in the two-week delayed posttest. The correct response rate was 50% on the immediate posttest and 40% on the delayed posttest. Results showed that the strongest predictor of higher test scores was uptake. In other words, accuracy on the posttests was higher when learners produced the targeted items following a FFE, lending support to the Output Hypothesis (Swain, 1995). On the other hand, type of FFE (preemptive, reactive) was not a significant predictor of accurate posttest performance. This finding echoes Williams (2001), who also compared learning gains from teacher-initiated and learner-initiated incidental focus on form through tailor-made posttests.

Participants in Williams' (2001) study were 8 ESL learners, two from each of four proficiency levels. A total of 65 hours of audiotaped classroom interactions was coded for grammatical and lexical LREs. Tailor-made posttests were created based on successfully resolved LREs, and they were administered approximately two weeks later. The format of the questions in the tailor-made tests varied according to the linguistic focus of the LRE. Results were analyzed according to who the initiator of the LRE was as well as who had supplied the targetlike resolution. Williams (2001) found that learners not only initiated LREs but also provided targetlike resolutions to LREs initiated by themselves, by the teacher, or by other learners. There were no differences between teacher-initiated reactive LREs (i.e., corrective feedback) and learner-initiated preemptive LREs (i.e., requests for assistance) in terms of performance on two-week delayed tailor-made posttests.

In light of the mixed results of the few studies that have examined the effects of preemptive vs. reactive FFEs, it is difficult to determine which type of FFE better promotes L2 learning. On the one hand, if the effectiveness of feedback is dependent upon it being perceived as such, it would be expected for solicited feedback (i.e., learner-initiated preemptive FFEs) to be more effective than unsolicited corrections (i.e., teacher-initiated reactive FFEs), as Ellis et al. (2001a) proposed. On the other hand, if teacher corrections are explicit enough to draw the learners' attention to form, then it is possible that both preemptive and reactive FFEs might be equally effective in promoting L2 learning, as the results of Williams (2001) and Loewen (2005) indicate. Indeed, that might be the case in teacher-learner interaction, as instructors are usually trained to provide feedback in the most effective ways possible. However, it cannot be assumed that the same holds true for learner-learner interaction, given the variable nature of the feedback that learners provide to each other, as discussed in the next section.

2.2 Learner-learner interaction

In addition to interacting with their instructor, learners in L2 classrooms, particularly in the context of Communicative Language Teaching, often engage in pair or group work that requires them to interact with other learners. There have been several descriptive studies comparing NS-NNS and NNS-NNS interaction (Fernandez-Dobao, 2012; García-Mayo & Pica, 2000; Mackey, Oliver, & Leeman, 2003; Porter, 1986; Sato & Lyster, 2007; Zhao & Bitchener, 2007). Among the advantages of learner-learner interaction, Long and Porter (1985) noted that NNS-NNS dyads afforded more opportunities for negotiation[4]. Indeed, Zhao and Bitchener

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[4] Fernandez-Dobao (2012) reported an advantage for NS-NNS interaction over NNS-NNS interaction in terms of the total number of lexical LREs (93 versus 63, respectively). However, there were slightly more "communication strategies (CS) episodes" in NNS-NNS interaction (268) than in NS-NNS interaction (213). Considering the author's definition of CS episodes as instances in which the learners "externalize the lexical problem encountered" and verbalize what

(2007) found significantly more FFEs in learner-learner interaction (77%) than in teacher-learner interaction (23%), and they also reported that "learners are more willing to ask questions of each other than they are of their teacher," in light of the significantly greater number of learner-initiated preemptive FFEs in learner-learner interaction (40.7%) than in teacher-learner interaction (5.6%). Presumably, this desire on the part of the learners to seek assistance might be effective in promoting language learning (Ellis et al., 2001a), given that it may serve as "an indirect indicator of learner readiness to acquire" (Williams, 2001, p. 337).

Reactive FFEs have also been shown to occur in learner-learner interaction, although very few studies have examined them in detail, and results have been somewhat mixed in terms of the nature of the feedback. Fuji and Mackey (2009) found that the most frequent types of feedback were clarification requests and confirmation checks, whereas Zhao and Bitchener (2007) indicated that metalinguistic explanations and recasts were the most common in learner-learner interaction. It is possible that task characteristics might influence the types of the feedback learners provide each other, as Fuji and Mackey (2009) suggest; however, further research on corrective feedback in NNS-NNS interaction is warranted.

A number of researchers have expressed concern regarding learners' ability to direct their attention to grammatical issues, given that the majority of the LREs observed in some learner-learner interaction studies focused on vocabulary (Fuji & Mackey, 2009; Williams, 1999; Zhao & Bitchener, 2007). However, it is possible that this tendency may be due more to the type of tasks used in the studies as opposed to characteristics of the interlocutors, given that several other

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they are "trying to say but cannot say with correct target-like vocabulary" (Fernandez-Dobao, 2012, p. 238), it could be argued that CS episodes also constitute opportunities for negotiation, in which case Fernandez-Dobao's (2012) findings would be to some extent in line with Long and Porter's (1985) suggestion that they occur more frequently in NNS-NNS interaction than NS-NNS interaction.

studies on learner-learner interaction reported the occurrence of a relatively high number of morphosyntactic LREs (Adams, 2007; Leeser, 2004; Ross-Feldman, 2007; Swain & Lapkin, 2001).

In terms of feedback, research has shown that learners can and do provide each other with targetlike information (Adams, 2006; Fuji & Mackey, 2009; Gass, Mackey, & Ross-Feldman, 2005; Williams, 2001; Zhao & Bitchener, 2007). Furthermore, learners in NNS-NNS dyads tend to be more likely than learners working with a NS to modify their output following feedback (Mackey et al., 2003; Sato & Lyster, 2007; Zhao & Bitchener, 2007). This advantage is important, given that, as previously discussed, uptake is hypothesized to be facilitative of L2 learning (Ellis et al., 2001a; Loewen, 2005).

On the other hand, one of the disadvantages of learner-learner interaction is that the rate of provision of feedback is not as high as in NS-NNS interaction (García-Mayo & Pica, 2000; Porter, 1986). Fuji and Mackey (2009) reported that learners provided feedback to their partners in less than 13% of instances of non-targetlike utterances. Learners might not always be able to answer their interlocutor's questions, they might not always notice non-target-like utterances, and they might not always feel comfortable correcting their peers. In addition, feedback provided by learners might not necessarily be accurate, although the incidence of incorrect feedback is overall relatively low. For instance, Zhao and Bitchener (2007) found that only 5% of FFEs were incorrectly resolved. Similarly, only 8% of LREs in LaPierre's (1994) study led to non-targetlike resolutions. An inevitable consequence of incorrect feedback is that learners might learn non-targetlike forms. Some studies have indeed documented the learning of incorrect forms. Adams (2007) found that out of the 20 incorrectly-resolved LREs, more than half of them were retained by learners, as evidenced by their responses on tailor-made posttests. In Zhao and Bitchener's

(2007) study, uptake occurred in 5 out of the 12 instances of incorrect feedback. Nevertheless, as Adams (2007) and LaPierre (1994) point out, this disadvantage of learner-learner interaction does not diminish its positive effects on L2 learning, which are discussed in the next section.

2.2.1 Learner-learner interaction and language learning

A growing body of research supports a connection between learner-learner interaction and L2 learning (Adams, 2006, 2007; Bitchener, 2004; LaPierre, 1994; Swain & Lapkin, 1998; Williams, 2001). In Swain and Lapkin's (1998) classroom-based study, a group of French immersion students engaged in a two-way information gap task, in which they were asked to describe to each other the pictures they had been given and then construct a written narrative together. Interactions were audio recorded and coded for LREs. A tailor-made posttest, which included questions that were specific to the LREs that had occurred during the interactions, was administered two weeks after the intervention. Results revealed a statistically significant correlation between the number of LREs for each pair, and their corresponding posttest scores, leading Swain and Lapkin (1998) to conclude that the LREs generated in the dyadic interactions had a positive impact on the learners' subsequent performance. A similar finding was reported by LaPierre (1994), who also utilized tailor-made posttests to directly measure the effects of language-related negotiation on L2 learning. LaPierre analyzed the dyadic interactions of two intact classes of eighth-grade immersion students completing a dictogloss task. Results showed that out of the 140 successfully resolved LREs, 79% of the corresponding posttest items one week later were answered correctly, showing that most learners had internalized the feedback provided by their peers, and thus, that interaction had had a positive impact on L2 development.

More recently, Adams (2007) also reported benefits of learner-learner interaction. The dyadic interactions of 25 ESL learners engaged in a written picture narration task were

transcribed and coded for LREs, some of which were then used to create tailor-made posttests to be administered five days after the last treatment session. Grammatical learning was measured by an acceptability judgment task, while lexical learning was assessed through a picture labeling task. Results showed that, on average, 59% of the posttest questions were answered correctly, albeit a very high standard deviation. Learners were more accurate in the acceptability judgment task on past tense (75%) than in the picture labeling task (51%). The author concluded that the negotiation of form and provision of feedback that takes place during peer collaboration can result in "moderate to high rates of learning" (Adams, 2007, p. 41).

While most studies on learner-learner interaction have measured knowledge retention over the span of one or two weeks, Bitchener (2004) investigated the extent to which linguistic information from successfully resolved LREs was retained over a period of 12 weeks. Moreover, retention was assessed not only through tailor-made posttests, but also by having learners perform the same communicative tasks three times: in the initial session, then one week later, and finally twelve weeks later. This task repetition design afforded "additional opportunities for producing the linguistic features that were negotiated in the initial performance", thus serving as an ideal tool for assessing retention within a communicative context (Bitchener, 2004, p. 85). Participants were 30 pre-intermediate ESL learners at a university in New Zealand. The tasks consisted of a 'spot-the-differences' task and a decision-making task. For the one-week and twelve-week posttests, participants did the same tasks with different partners. Additionally, a tailor-made posttest was administered three days after the final session to measure the retention of all of the targeted forms negotiated during the initial session, including those that might have been avoided or not attempted during the communicative posttests. Overall rates of retention were high after one week (69.5%) as well as after 12 weeks (62%). Information from the tailor-

made posttests did not contribute any additional evidence of learning that had not been already observed in the communicative tasks. Findings from this study suggest a strong link between learner-learner interaction and L2 learning by offering empirical evidence that linguistic information negotiated in the course of an LRE or FFE is retained over an extended period of time.

2.2.2 Limitations of previous research on interaction

The majority of studies that explored the benefits of learner-initiated attention to form have measured learning gains by means of tailor-made posttests, which provide more direct evidence for learning than uptake moves. Nonetheless, high accuracy in tailor-made posttests should be interpreted with caution when trying to establish a link between learner-learner interaction and learning. Perhaps the biggest limitation of employing tailor-made posttests is that while the tasks in which the LREs arise (e.g., narrating a story) focus heavily on meaning, the tasks in tailor-made posttests (e.g., grammaticality judgment tasks) focus entirely on form. Moreover, questions in tailor-made posttests tend to focus on comprehension rather than production, and thus involve "significantly less communicative pressure than the treatments" (Adams, 2007, p. 50). Being able to judge the grammaticality of a sentence might not necessarily be indicative of the learners' ability to use the targeted forms in spontaneous production. In the case of Loewen (2005), the validity of tailor-made posttests is further complicated by the discrepancy in modality between the tasks, which were oral, and the posttests, which were written.

As Ellis et al. (2001a) point out, "to obtain evidence of acquisition, it would be necessary to demonstrate that the learners possess the autonomous ability to use the feature, for example by investigating whether they can use the form correctly on subsequent occasions without

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prompting" (p. 286-87). In order to establish a clearer empirical connection between learner-learner interaction and L2 learning, it is imperative that the post-treatment task be as meaningful and contextualized as the interactive task. The fact that Bitchener's (2004) results from the tailor-made posttest mirrored those from the communicative tasks suggests that communicative tasks can indeed capture empirical evidence of language retention as successfully as customized posttests, but without compromising meaningfulness.

2.3 Learner linguistic background in learner-learner interaction

The effectiveness of interaction in promoting language learning has been found to be dependent upon a variety of factors, including task type (Adams, 2006; Bitchener, 2003, 2004; Kim, 2009), interactional context (Gass, et al., 2005; Oliver & Mackey, 2003), and individual characteristics of the interlocutors, such as gender (Bitchener, 2003; Gass & Varonis, 1986; Oliver, 2002; Pica, Holliday, Lewis, Berducci, & Newman, 1991; Ross-Feldman, 2007), age (Mackey et al., 2003; Oliver, 2000), and proficiency level (Kim & McDonough, 2008; Leeser, 2004; Watanabe & Swain, 2007; Williams 1999). Research has shown that any of these factors may have influence the amount of talk, the learners' orientation to form, the number of opportunities for negotiation, as well as the outcome of negotiation episodes, all of which would certainly impact the extent to which interaction facilitates learning.

Considerably less is known about the effects of learner linguistic background on interactional patterns. In most of the SLA literature on interaction, interlocutors have been categorized by their linguistic background in a dichotomous fashion as either NS or NNS/L2 learner. However, over the last two decades, foreign language educators and researchers have recognized the fact that L2 learners are not the only type of NNS in L2 classrooms. This is especially the case in Spanish language courses, where increasingly more heritage language (HL)

learners are enrolling in the same classes as L2 learners. Since approximately 80% of universities in the United States do not offer separate programs for heritage learners, "these students are currently and will continue to be in our Spanish classes" (Ingold, Rivers, Tesser, & Ashby, 2002, p. 328). This trend puts forth the need to explore the effects of L2-HL learner interaction in order to discern the possible advantages and disadvantages that it might offer to each type of learner.

Recent studies have suggested that L2 and HL learners may benefit from working together (Blake & Zyzik, 2003; Bowles, 2011a, in press), and that the same type of form-focused instruction that is commonly adopted in foreign language courses may also be beneficial for HL learners (Montrul & Bowles, 2010; Potowski, Jegerski, & Morgan-Short, 2009). The underlying premise of this position is that HL learners are not radically different from L2 learners, as they tend to share some of the same linguistic challenges (Lipski, 1993; Lynch, 2008). Conversely, other scholars insist that HL learners would be better suited by separate classes, presumably because of the type and content of instruction (Potowski, 2002, 2005; Roca, 1997; Valdés, 1981, 1997). Advocates for implementing separate courses tailored to the needs of this population of students assume that HL and L2 learners are culturally and linguistically different. It is important, then, to understand the similarities and differences between HL learners and L2 learners.

2.3.1 Linguistic profile of HL learners

An HL learner can be minimally defined as an individual who was "raised in a home where a non-English language is spoken, who speaks or at least understands the language, and who is to some degree bilingual in that language and in English" (Valdés, 2001, p. 38). However, HL learners constitute a heterogeneous group with respect to their degree of bilingualism. Some may be linguistically more similar to monolingually-raised native speakers, whereas others might

resemble L2 learners in their linguistic performance. From a sociolinguistic standpoint, their language dominance may be correlated to their immigrational generation. Second-generation immigrants tend to be more dominant in the HL than the third generation, who will likely be English dominant; and finally, the children of the third generation (the fourth generation) will most likely be monolingual English speakers (Valdés, 2001). From an acquisition standpoint, HL learners may be characterized in terms of age on onset of bilingualism, as well as the amount and type of exposure to the heritage language, which inevitably impact the outcome of acquisition.

As Montrul (2008) pointed out, HL acquisition "is a hybrid type of acquisition which combines features of child L1 and adult L2 acquisition" (p. 216). Perhaps the reason why some scholars question the need for separate courses for HL and L2 learners lies in the fact that the outcome of HL acquisition resembles that of L2 acquisition in that it may be described as variable and unsuccessful, in stark contrast to L1 acquisition. Not only is there a great amount of individual variability in terms of ultimate attainment in both HL and L2 learners, but also the outcome of acquisition in both types of learners tends to be non-targetlike. Even though L1, L2, and HL learners make similar developmental errors, only L1 learners are universally successful in overcoming them and attaining full linguistic competence. The linguistic development of L2 and HL learners, on the other hand, is susceptible to fossilization at any point. In other words, they may continue to make errors despite instruction and corrective feedback. Moreover, the developmental path of HL acquisition is also different from L1 acquisition, yet similar to L2 acquisition, in the type of errors learners make. In addition to making developmental errors, like L1 learners, both L2 and HL learners make transfer errors. In the case of L2 learners, their transfer errors stem from L1 influence, whereas HL learners make transfer errors from the majority language after the onset of bilingualism.

Another similarity between L2 and HL acquisition, which sets them both apart from L1 acquisition, is the fact that affective factors may influence the outcome of acquisition. Unlike L1 learners, both L2 and HL learners might have varying degrees of motivation to learn, maintain or re-acquire the language. Though their impact may be difficult to measure, socio-affective factors cannot be overlooked when examining the variability in learning outcomes, especially in the case of HL learners. Several researchers have suggested that internal factors such as cultural identity and attitudes towards the minority language may play a role in HL development (He, 2010; Kondo-Brown, 2001; Lee, 2002). Motivation plays a role in how much exposure to the language the learners seek in the community (i.e., outside the classroom for L2 learners, and outside the family for HL learners).

Unlike monolingually-raised children, the input that HL learners receive in a bilingual environment tends to be more limited in amount and scope. L1 learners are exposed to abundant input used in a wide variety of contexts (family, community, mass media, etc.), whereas HL learners have access only to contextually restricted input that may vary in its amount and frequency. Similarly, L2 learners have a limited number of opportunities for input and output, especially in a foreign language context. Nonetheless, even though the input that HL speakers are exposed to is not as rich as the input that monolingually-raised L1 learners receive, it is still more abundant than the limited oral input that adult L2 learners receive in the classroom. This may explain why HL speakers exhibit a wider lexical repertoire than L2 learners, especially when it comes to early-acquired words that are frequent in colloquial registers. A recent study by Montrul and Foote (2012) found that HL learners were significantly more accurate than L2 learners in selecting the correct translation of words acquired in early childhood. Likewise, Polinsky (2005) found that Russian HL speakers were faster and more accurate than L2 learners

in their retrieval of verbs. Nevertheless, the written and oral discourse of HL learners still exhibits numerous gaps in their lexicon, which are oftentimes compensated by borrowings or semantic extensions from English (Colombi, 1997; Lynch, 2008; Teschner, 1981; Schwarz, 2003). In this particular aspect, HL learners resemble L2 learners. Lynch (2008) found that HL and L2 learners were about equally likely to use invented Spanish words or to insert English words in spontaneous oral production.

Even though there are some clear similarities in the developmental path and overall outcome of HL and L2 acquisition, there are also some important differences between HL acquisition and adult L2 acquisition. The first difference lies in the timing of the input. HL speakers, like L1 monolingual speakers, are exposed to the language since birth, either in conjunction with the majority language, in the case of simultaneous bilinguals, or by itself, in the case of sequential bilinguals. In both cases, exposure to the heritage language happens in early childhood, when "the essence of native speaker competence develops" (Montrul, 2010a, p. 11). This stands in sharp contrast with adult L2 acquisition, which occurs after puberty (i.e., after the critical period). Thus, even with incomplete acquisition of the minority language, HL learners might still be superior to L2 learners in certain linguistic domains that are developed early in life, such as phonological production and perception. In general, most HL learners are perceived as having native-like pronunciation, and listening comprehension is typically the strongest of their language skills (Knightly, Jun, Oh, & Au, 2003; Oh, Jun, Knightly, & Au, 2003).

Another difference between HL and L2 acquisition is the mode of acquisition: whereas HL acquisition occurs in a naturalistic setting, L2 acquisition typically occurs in an instructed context. Like L1 learners, HL learners acquire the language aurally through the interaction with their caretakers and possibly other members of the family. Instructed L2 learners have acquired

the language primarily in the classroom and have had considerable experience reading and writing in the target language. By contrast, the majority of HL learners are illiterate in the minority language when they first enter the target language classroom, as their schooling tends to be in the majority language and their exposure to the minority language in written form is quite limited (Carreira & Kagan, 2011; Montrul, 2008; Valdés, 2001). The recent National Heritage Language Survey shows this is especially true in the case of Spanish HL speakers: 45.5% of 396 Spanish HL speakers surveyed had never formally studied their heritage language (Carreira & Kagan, 2011). As a result of acquiring the language via the aural medium and receiving little to no formal instruction in the minority language, HL learners tend to perform better on oral than written tasks, while the opposite is true for L2 learners (Bowles, 2011b; Montrul & Perpiñán, 2011; Montrul, et al., 2008). Moreover, HL learners show considerable deficiencies in their command of formal or academic registers, as well as orthographic conventions (Colombi, 1997; Teschner, 1981), unlike L2 learners (Bowles, in press). Colombi (1997) points out that the same degree of orthographic variability in HL speakers is also found among monolingually-raised Spanish speakers with limited formal schooling.

The lack of formal instruction also results in a lack of metalinguistic knowledge, which constitutes another important difference between HL and L2 learners. The vast majority of instructed L2 learners receive both extensive exposure to written language and explicit instruction on the target language, and, consequently, they tend to exhibit ample metalinguistic awareness (Bowles, 2011b). An HL learner, on the other hand, "uses a set of internalized grammatical rules but does not have the metalanguage to talk about the grammatical system itself" (Valdés, 2001, p. 47). Consequently, HL learners may rely on how a word or phrase

'sounds' to decide whether it is correct or not (Schwartz, 2003), whereas L2 learners may be more likely to fall back on their explicit knowledge.

Furthermore, schooling also has a differential effect on the acquisition of more complex structures that are infrequent in the input and, thus, acquired later in life. For example, research indicates that HL learners have problems interpreting relative clauses (O'Grady, Lee, & Choo, 2001; Polinsky, 2008) and long-distance dependencies (Kim, Montrul, & Yoon, 2009). These structures are not only less frequent in the input, but they also tend to be acquired by monolingual L1 learners later in life and reinforced through schooling and literacy. In contrast, certain aspects of syntax that are acquired early by L1 learners may be spared from loss or transfer effects in HL acquisition. Montrul (2010b) found that even low proficiency HL learners used clitics in a more native-like manner than proficiency-matched L2 learners, and they also demonstrated native-like knowledge of word order in sentences containing preverbal clitics and postverbal subjects.

With respect to morphosyntax, many of the features that are problematic for L2 learners also appear to be challenging for HL learners. Overall, the tendency in the inflectional morphology systems of HL speakers is towards simplification and regularization (Silva-Corvalán, 1994). This is manifested, for example, in the errors that Spanish HL speakers make with gender agreement of marked forms, such as feminine and neuter (Montrul, Foote, & Perpiñán, 2008). Montrul (2011a) also points out that the output of HL learners, like that of L2 learners, is characterized by morphological variability: "they may use the same noun with one gender in one sentence and another gender two sentences later" (p. iii). Furthermore, both HL and L2 learners have difficulties with aspect and mood distinctions, and they tend to use the unmarked forms in place of the marked ones. For instance, Lynch (2008) reports relatively low

rates of accurate subjunctive usage for both HL and L2 learners in spontaneous speech. Montrul

and Perpiñán (2011) also found that Spanish L2 and HL learners exhibited higher accuracy with

indicative than with subjunctive, and with preterit than with imperfect, although HL learners

showed better command of the semantic differences between the two verb forms than L2 learners

did. Lastly, Spanish HL and L2 learners make similar errors with dative case marking of animate

direct objects in both recognition and production tasks (Lynch, 2008; Montrul & Bowles, 2009).

2.3.2 L2 learner-HL learner interaction

In spite of the increasing enrollment of HL learners in foreign language courses, research

on the interaction in L2-HL dyads has been scarce (Blake & Zyzik, 2003; Bowles, 2011a, in

press). The first study to explore L2-HL interactions was conducted by Blake and Zyzik (2003).

The researchers examined the nature of the exchanges between L2 and HL learners using

synchronous Computer Mediated Communication (CMC). The use of text-based CMC was

deemed appropriate, presuming that the written modality would promote noticing and

negotiation, especially for HL learners who "may be lacking in the area of textual competence"

(Blake & Zyzik, 2003, p. 524). Participants were 11 L2 learners of Spanish enrolled in

intermediate Spanish course, and 11 HL learners enrolled in a Spanish for Native Speakers class.

The group of HL learners was highly heterogeneous, given that some of them had been born and

schooled in Spanish-speaking countries, while others were born and schooled in the United

States. Since no independent measure of proficiency was employed, and since the L2 and HL

learners were enrolled in separate courses, it is not clear whether the linguistic abilities of the

learners were comparable within or between groups. Analyses of the chat transcripts revealed a

low number of instances of negotiation: only 30 in approximately 11 hours of interaction. Out of

those 30 episodes, 24 were related to vocabulary, and in 75% of those cases, the HL learner was

assisting the L2 learner. Even though the data showed distinct one-sided benefits in favor of the L2 learners, the authors concluded that the exchange was also beneficial for the HL learners in that it afforded them a myriad of affective benefits, such as boosting their self-confidence and "reinforcing a more positive self-image of their superior cultural and linguistic knowledge of Spanish" (p. 541). However, no data were collected on students' perceptions. Despite its limitations, the study by Blake and Zyzik (2003) is the first to observe L2-HL interactions, and it is certainly a stepping stone for future research.

More recently, Bowles (in press) conducted a classroom-based study investigating the occurrence of LREs during task-based interactions between L2 and HL learners. Participants were 24 students (12 L2 learners, 12 HL learners) enrolled in a fifth-semester Spanish grammar course. Dyadic interactions were audiorecorded as learners engaged in a two-way information gap task similar to a 'spot-the-differences' activity. Out of the 62 total LREs, results showed that L2 and HL learners initiated a roughly equal number of them: 34 were HL-initiated and 28 were L2-initiated. Bowles' (in press) results echoed Blake and Zyzik's (2003) findings in that the majority of LREs (82%) focused on lexical issues. In terms of benefits, the HL learners were able to provide targetlike resolutions to the LREs initiated by the L2 learners more often than the other way around. Bowles (in press) speculated that task-based interaction could bring about benefits for both L2 and HL learners, especially in activities that promote grammatical negotiation. Nonetheless, it is difficult to verify whether either member of the dyad actually made learning gains as a result of the interaction, given the lack of post-treatment assessment measures.

Whereas Bowles (in press) utilized only an oral task, Bowles (2011a) employed both oral and written tasks in order to investigate whether task modality had an effect on the occurrence of

LREs in L2-HL interaction. Participants were 18 high-intermediate learners (9 L2, 9 HL) not necessarily enrolled in the same courses, but rather matched for proficiency. Dyads were asked to complete a total of three tasks: an oral information-gap task, a written information-gap task, and a written cloze and collaborative writing task. Audio-recorded interactions were coded for LREs, and the data were analyzed to determine the roles of learner background (L2, HL) and task modality (oral, written). First, results showed that the linguistic profile of the learner did not have an effect the overall orientation to form, as both types of learners initiated a statistically similar number of LREs. On the other hand, task modality was found to influence both the incidence and the type of LREs. A significantly higher proportion of the LREs occurred on the two written tasks (85%) than on the oral production task (15%). Furthermore, while almost all of the LREs in the oral task were lexical in nature, there were twice as many grammar-focused LREs as lexical LREs on the written tasks. These results parallel those of Adams (2006) and Ross-Feldman (2007) who found in their studies of L2-L2 dyads that tasks that include a writing component are more effective at promoting focus on form than tasks that only involve oral production.

An important finding obtained by Bowles (2011a) was the high proportion of LREs that focused on orthography (37%). More than two-thirds of those LREs were initiated by HL learners, and the rest were initiated by the L2 learners in reaction to something the HL learner had written. The author points out that, as a result of having acquired the language in the classroom through abundant written input, L2 learners tend to be very accurate and knowledgeable about spelling and accent placement, which might explain why neither Adams (2006) nor Ross-Feldman (2007) reported any orthography-focused LREs in their analyses of L2-L2 interactions. The HL learners in Bowles' (2011a) study, on the contrary, showed a high

degree of insecurity in their spelling skills, probably due to having acquired the language aurally. These findings suggest that engaging in a collaborative writing task could bring about more even benefits for both types of learners: "L2 learners could assist HL learners with issues of spelling and accent placement and, conversely, HL learners could help to augment L2 learners' lexical repertoire" (Bowles, 2011a, p. 53).

2.3.3 Limitations of previous research on L2-HL interaction

While both L2 and HL learners appear to benefit from interacting with each other, especially during collaborative writing tasks, learning gains for either type of learner is yet to be determined. Since none of the previous studies on L2-HL interaction included post-treatment assessment measures, it is difficult to ascertain to what extent task-based interaction in mixed dyads results in retention of forms negotiated during FFEs.

Another limitation of previous research on L2-HL interaction lies in the lack of distinction between preemptive and reactive FFEs. Coding episodes only according to who initiated them provides an incomplete picture of the nature of the exchanges in terms of who assisted whom. A preemptive FFE indicates a request for assistance, whereas a reactive FFE consists of a provision of assistance. In the case of Bowles (2011a, in press), for instance, claiming that FFEs initiated by L2 learners were successfully resolved does not necessarily mean that HL learners were able to provide assistance to L2 learners. It could be the case that some L2 learners initiated reactive FFEs in which they provided corrective feedback to the HL learners. In fact, Bowles (2011a) acknowledges that was indeed the case with issues of orthography. Distinguishing between preemptive and reactive FFEs would prove helpful in determining whether one learner (L2, HL) benefits more from the interaction than the reverse.

Lastly, the three research studies reviewed in this section have focused only on mixed dyads. A systematic comparison between matched (L2-L2, HL-HL) and mixed (L2-HL) dyads engaged in the same tasks would offer more information regarding to what extent L2 and HL learners benefit from working with each other versus working with an interlocutor from the same linguistic background.

2.4 Summary of relevant research

Numerous studies have lent empirical support to the positive effects of NS-NNS interaction on L2 learning. It has been shown not only that incidental focus on form occurs between teachers and learners during the course of meaning-focused instruction but also that learners benefit from FFEs as evidenced by their modified output (Ellis et al., 2001a) as well as by their performance on subsequent tailor-made tests (Loewen, 2005). Both learner-initiated preemptive FFEs and teacher-initiated reactive FFEs appear to be conducive to learning, but no studies to date have systematically compared the effects of preemptive and reactive FFEs in learner-learner interaction.

Relatively fewer studies have examined the impact of learner-learner interaction on L2 learning. Through the use of tailor-made posttests, researchers have found that most learners internalize the feedback provided by their peers, given that a high proportion of the posttest answers matched the forms provided during interaction (Adams, 2007; LaPierre, 1994; Swain & Lapkin, 1998). Given the decontextualized and form-based orientation of tailor-made posttests, it is clear that a better way to measure learning gains resulting from learner-learner interaction would be to use a more contextualized and meaningful spontaneous production task, as Bitchener (2004) did.

A recent strand of research has begun to explore the role of learner linguistic background in dyadic interactions, particularly between L2 learners and HL learners (Blake & Zyzik, 2003; Bowles, 2011a, in press). Overall, studies have found relatively one-sided benefits in favor of L2 learners, except during collaborative writing tasks, which seem to lead to more even benefits for both types of learners. However, learning outcomes of L2-HL learner interaction have not yet been documented, and no research to date has compared the interaction of mixed and matched dyads in terms of their orientation to form.

2.5 Research questions

The present study aims to answer many of the questions that have not been addressed by previous research. Specifically:

1. Do L2-L2 and L2-HL dyads differ in terms of their focus on form during interaction?

    a.   Are there any differences in the number of form-focused episodes?

    b.   Are there any differences in the type of FFEs (preemptive, reactive)?

    c.   Are there any differences in the linguistic focus of FFEs (morphosyntactic, lexical, orthographic)?

    d.   Are there any differences in the resolution of FFEs (more targetlike, less targetlike, unresolved)?

2. Do HL learners and L2 learners in L2-HL dyads differ in terms of their focus on form during interaction?

    a.   Does one learner (L2 or HL) initiate FFEs more often than the other?

    b.   Does one learner (L2 or HL) initiate one type of FFEs (preemptive, reactive) more often than the other?

    c.   Does one learner (L2 or HL) resolve FFEs more often than the other?

d. Does one learner (L2 or HL) resolve FFEs of different linguistic focus (morphosyntactic, lexical, orthographic) in a more targetlike way more often than the other?

3. Do L2-L2 and L2-HL dyads differ in terms of learning gains as a result of the interaction?

a. Are there any differences in the frequency of incorporation of linguistic information from successfully resolved FFEs in subsequent individual writing tasks?

i. Are there any differences according to the type of FFEs (preemptive, reactive)?

ii. Are there any differences according to the linguistic focus of FFEs (morphosyntactic, lexical, orthographic)?

4. Do HL learners and L2 learners in L2-HL dyads differ in terms of learning gains as a result of the interaction?

a. Does one learner (L2 or HL) use linguistic information provided by their partner in subsequent individual writing tasks more often than the other?

2.5.1 Hypotheses

With respect to the first research question, it is hypothesized that there will be no differences between L2-L2 and L2-HL dyads in terms of their focus on form during interaction. Research has suggested that both preemptive and reactive FFEs of varying linguistic focus arise in L2-L2 learner interaction (Adams, 2006; Bitchener, 2004; LaPierre, 1994; Leeser, 2004; Swain & Lapkin, 1998; Williams, 2001; Zhao & Bitchener, 2007) as well as in L2-HL learner interaction (Blake & Zyzik, 2003; Bowles, 2011a, in press). Moreover, the rate of successful resolution of FFEs reported in L2-HL learner interaction studies has been comparable to that in

L2-L2 learner interaction research. For instance, Bowles (2011a) found that L2-HL dyads resolved 79% of LREs in a more targetlike way, and Leeser (2004) reported that 77% of LREs in L2-L2 dyads were resolved correctly.

Regarding the second research question, it is hypothesized that HL learners and L2 learners in L2-HL dyads will not differ in terms of their focus on form during interaction. Research has shown that L2 and HL learners initiate FFEs equally as often (Bowles, 2011a, in press). Also, given that no research to date has compared the occurrence of preemptive and reactive FFEs in L2-HL interaction, a null hypothesis is adopted regarding differences in initiation of FFEs according to type. It follows that there will be no differences between HL learners and L2 learners in terms of the overall rate of resolution of FFEs. However, in terms of resolution of FFEs of different linguistic focus, it is hypothesized that L2 learners will resolve orthographic FFEs in a targetlike way more often than the HL learners, and that HL learners will correctly resolve lexical FFEs more often than the L2 learners; however, no differences are expected with regards to resolution of morphosyntactic FFEs. These three hypotheses are based on what research has uncovered about the similarities and differences between the linguistic profile of L2 and HL learners: (1) HL learners show deficiencies in their command of orthographic conventions (Colombi, 1997; Teschner, 1981), whereas L2 learners are "quite accurate with spelling and accent placement" (Bowles, in press, p. 46); (2) HL learners tend to have a wider repertoire of early-acquired and colloquial lexical items than L2 learners (Montrul, 2009; Polinsky, 2005), which might be precisely the type of vocabulary needed to accomplish the task in the present study; and (3) L2 and HL learners struggle with many of the same aspects of morphosyntax and make similar grammatical errors (Lynch, 2008; Montrul, 2011; Montrul & Bowles, 2009; Montrul, et al., 2008; Montrul & Perpiñán, 2011).

With respect to the third and fourth research questions, it is hypothesized that there will be no differences between L2-L2 and L2-HL dyads in terms of learning gains as a result of the interaction, and that HL learners and L2 learners in L2-HL dyads will not differ in terms of learning gains as a result of the interaction. Even though learning gains from L2-L2 interaction have been documented in the literature (Adams, 2007; Bitchener, 2004; LaPierre, 1994; Swain & Lapkin, 1998; Williams, 2001), no studies to date have measured learning gains from L2-HL interaction. Therefore, null hypotheses are adopted for these two research questions.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This chapter describes the methodology utilized in order to answer the research questions that guide this investigation. I will begin by establishing how key constructs are operationalized as well as providing an overview of the research design. Then, I will describe the characteristics of the participants, materials, and data collection procedure. Lastly, the coding procedure will be discussed in detail, as it is crucial for proper interpretation of the results.

3.1 Operationalization and research design

Following previous studies on interaction (e.g., Adams, 2007; Bitchener, 2004; Loewen, 2005; Swain & Lapkin, 1998; Williams, 2001) learning opportunities were operationalized as FFEs, as defined by Ellis et al. (2001a). Learning outcomes were measured as the incorporation of linguistic information from successfully resolved FFEs in immediate and two-week delayed post-treatment individual writing tasks. As discussed in Chapter 2, using a meaningful production task to assess learning gains from learner-learner interaction may be a more valid approach than employing tailor-made posttests. If learners produced a targetlike form provided by their peers during interaction in their individual narratives, that form was considered to have been learned as a result of the interaction. Incorporation of incorrectly resolved FFEs was analyzed separately, as it was not considered to be indicative of learning gains per se.

The study comprised a total of two sessions. In the first session, learners worked in pairs to write a narrative in Spanish in the past based on a wordless picture story. Immediate learning gains were measured through an individual writing task that took place at the completion of the collaborative task; knowledge retention over time was measured through an identical individual writing task two weeks later. Figure 1 below summarizes the research design of this study.

Figure 3.1: Research design

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│                                                                   │
│         Language background questionnaire (online)                │
│                                                                   │
└─────────────────────────────────────────────────────────────────┘
                                 ⬇
┌─────────────────────────────────────────────────────────────────┐
│                          Session 1                                │
│      Treatment: collaborative writing task (L2-L2 and L2-HL dyads)│
│     Immediate posttest: individually write the same story without │
│                     access to their first draft                   │
└─────────────────────────────────────────────────────────────────┘
                                 ⬇
┌─────────────────────────────────────────────────────────────────┐
│                   Session 2 (two weeks later)                     │
│     Delayed posttest: individually write the same story without   │
│                    access to previous drafts                      │
│                    Proficiency test (online)                      │
└─────────────────────────────────────────────────────────────────┘
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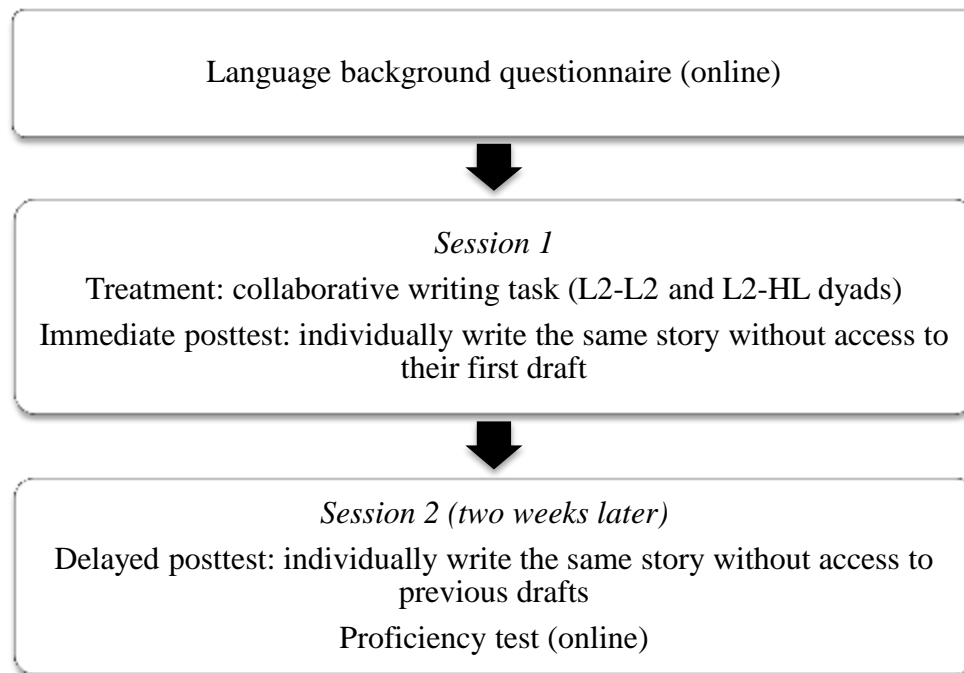
The immediate and delayed post-treatment tasks (or posttests) used the same prompt as the collaborative writing task. In other words, learners were asked to write the same story on three separate occasions (once collaboratively, once individually in the first session, and once again individually in the second session two weeks later). Task-repetition effects on oral and written narratives have been investigated in several studies in the field of SLA. Research has indicated that task repetition results in an increase in fluency and syntactic complexity (Bygate, 1996, 2001); however, the effects of task repetition on morphosyntactic accuracy appear to be limited (Bygate, 2001; Gass, Mackey, Alvarez-Torres, & Fernandez-Garcia, 1999; Patanasorn, 2010). In this study, as was also the case in Bitchener's (2004) study, task repetition was implemented as a way to prompt learners to use specific linguistic information from the FFEs in a meaningful context. However, unlike Bitchener (2004), the post-treatment tasks were completed individually rather than with different partners. Even though previous studies on NS-

NNS interaction have measured learning outcomes by observing the production of targeted forms in subsequent task-based interaction (Leeman, 2003; Mackey, 1999; McDonough, 2005), the same assessment procedure may not be quite as reliable in the case of learner-learner interaction. As Adams (2004) points out learners are not "trained to target specific forms or to provide or not provide interactional feedback," and thus "it would be possible for learners to affect each other's performance" in post-treatment tasks (p. 92). Therefore, individual post-treatment tasks that elicited meaningful production seemed to be an optimal instrument to measure learning outcomes from learner-learner interaction[5].

3.2 Participants

A total of 44 learners in 22 learner-learner dyads (14 L2-L2 dyads and 8 L2-HL dyads) took part in the study. One of the 14 L2-L2 dyads was eliminated from the final dataset because one of the learners did not return for the delayed posttest, and another L2-L2 dyad was discarded due to not completing the task according to the instructions, leaving a total of 12 eligible L2-L2 dyads. However, in order to conduct statistical analyses comparing L2-L2 and L2-HL dyads, it is necessary to have an equal number of mixed and matched dyads. Thus, 8 out of the 12 L2-L2 eligible dyads were randomly selected for inclusion in this study, and all 8 L2-HL dyads were included as well, meaning that data analyses are based on a total of 16 dyads (32 learners).

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[5] A potential limitation of using a written production task as the instrument to measure retention of knowledge is that it may prompt learners to pay attention to linguistic form merely due to the nature of written output. Thus, accurate use of a linguistic feature in the written post-treatment task could be the result of the learner paying closer attention to form and not necessarily a reflection of the effectiveness of interaction in promoting language learning. One way to tease apart the effects of interaction from those of written production could be to include a control group in which learners complete all tasks individually. If learners in the control group self-correct the use of certain features (e.g., gender agreement, DOM, accent marks) from one draft to another, then it would be logical to question to what extent the retention of information about gender agreement exchanged in an FFE was the result of the interaction as opposed to heightened awareness during written production.

All of the learners were undergraduate students at a large public university in the United States enrolled in a fifth-semester Spanish course. This intermediate-level course is one of the core requirements for all Spanish majors and minors. Student placement is based on either their progression through the course sequence or their score on a written proficiency test administered by the university. The course consists of a general review of Spanish grammar in a lecture-discussion format. Students attend lecture presentations twice a week, where they receive explicit grammar instruction in Spanish, and they attend smaller discussion sections once a week. In a given semester, there are typically 10-12 discussion sections of about 20-25 students each. In the discussion sections, students engage in pair or group activities in which the grammar points covered in lecture are used for a communicative purpose (e.g., information-gap tasks, decision-making tasks, etc.). Out-of-class reading and writing assignments are also an important part of the course. All writing assignments are individual, but there are peer review sessions during the discussion sections, where students read each other's drafts and provide their classmates with feedback on content and form. Therefore, participants were familiar with the type of task that they were asked to do in the current study.

The most important characteristics of the L2 and HL learners in this study are summarized in Table 1 below.

Table 3.1
Learner characteristics

	L2 learners (n=24)		HL learners (n=8)	
Gender	20 females, 4 males		5 females, 3 males	
Age	Mean = 18.6	Range = 18-20	Mean = 19.25	Range = 19-20
Age of first exposure to Spanish	Mean = 13	Range = 10-15	*Birth*	
Age of first exposure to English	*Birth*		Mean = 4.25	Range = 0-6
MLA/DELE Proficiency score (out of 50)	Mean = 25	Range = 17-39	Mean = 35.5	Range = 28-40
Self-rated Spanish proficiency (out of 5)	Mean = 3	Range = 2-4	Mean = 4.5	Range = 4-5
Self-rated English proficiency (out of 5)	Mean = 5	Range = 5-5	Mean = 5	Range = 5-5
Self-rated writing skills in Spanish (out of 5)	Mean = 3.25	Range = 2-4	Mean = 3.25	Range = 1-4

3.2.1 L2 learners

The L2 learners (*n*=24, 20 females, 4 males) were monolingually-raised native speakers of English, born and schooled in the U.S. They reported using only English with friends and family members in their childhood as well as currently. All had started studying Spanish as a foreign language after the age of 10 (average age of first exposure: 13). They reported having taken an average of 4 years of Spanish in high school, and none of them had had any study abroad experience longer than one month. Their scores on the MLA/DELE proficiency test, which is described in detail below, ranged quite considerably, from 17 to 39, with an average of 25 (out of a maximum possible score of 50). Still, almost all of them rated their current overall language ability in Spanish as intermediate on a self-rating scale with a minimum value of 1 and a maximum value of 5 (*M*=3), with listening comprehension and writing as their highest self-

rated language skills (*M*=3.25). Figure 3.1 below reflects the extent of the range of proficiency test scores among L2 learners, especially among those in L2-L2 dyads.

An independent-samples t-test conducted on the proficiency test scores of the L2 learners in L2-L2 dyads revealed that there were no significant differences between dyad members in terms of proficiency $t(14)= 0.32$, $p=.76$. On the other hand, the L2 learners in L2-HL dyads differed significantly from their HL counterparts in terms of proficiency scores, $t(14)= -5.89$, $p<$ .0001. This discrepancy between the two types of dyads should be considered when interpreting and extrapolating the results of this study. However, the fact that the HL learners have slightly higher proficiency than their L2 classmates reflects the classroom reality and preserves the ecological validity of the study.

Figure 3.2
Boxplot chart of proficiency test scores by learner type: L2 learners in L2-L2 dyad, L2 learners in L2-HL dyads, and HL learners.
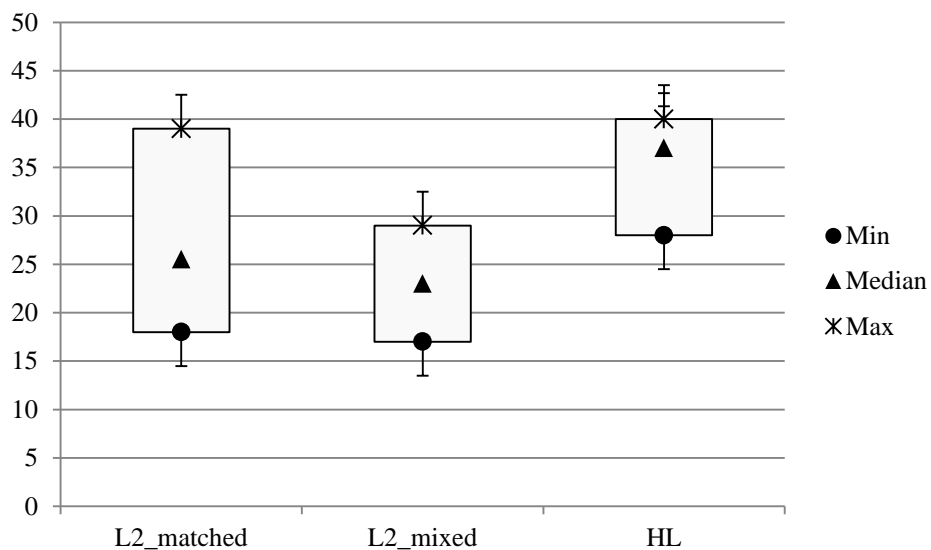
3.2.2 HL learners

The HL learners (*n*=8, 5 females, 3 males), on the other hand, were bilingually-raised Spanish/English speakers, born and schooled in the U.S. Seven of the eight had both parents born in a Spanish-speaking country (5 from Mexico, 1 from Colombia, 1 from Guatemala), and one learner had one Mexican-born parent and one US-born Spanish-speaking parent. All had been exposed to English before the age of 6. As for language use at home in childhood, seven of the eight HL learners reported using both English and Spanish; one of the HL learners reported using only Spanish. They indicated they currently used mostly Spanish with parents and grandparents, but mostly English with their siblings and friends. Only one of the HL learners indicated she had not taken any Spanish language courses before college, whereas the rest had taken 3-4 years of Spanish as a foreign language courses in high school. The HL learners reported longer or more frequent stays in Spanish-speaking countries than the L2 learners. Four of them indicated they visited their parents' homeland on an annual or biannual basis. The other four reported one-time visits to Spanish-speaking countries (Mexico, Puerto Rico) that spanned over 1-3 months.

The HL learners' scores on the MLA/DELE proficiency test ranged from 28 to 40, with a mean of 35.5. In terms of language dominance, the HL learners' self-ratings of overall language ability in Spanish and in English were comparable (*M*=4.5 in Spanish, *M*=5 in English). Nonetheless, half of them expressed an overall preference for using English in all contexts, and the other half indicated that their language use was context-dependent: "family = Spanish, everyone else = English," as one of the HL learners stated in the language background questionnaire. Moreover, only three of them indicated that they considered Spanish to be their native language, whereas the other five thought of it as a second or foreign language, despite the fact that they had been exposed to Spanish from birth. Lastly, unlike the L2 learners, the HL

learners' lowest self-rated language skill in Spanish was writing. However, as it can be seen in Table 1, the L2 learners' and the HL learners' mean self-rating of their writing skills in Spanish was identical (*M*=3.25).

3.3 Materials

3.3.1 Language background questionnaire

Participants were categorized as L2 or HL learners based on information collected through a language background questionnaire (see Appendix A). Besides eliciting personal information such as birthplace, education, and family background, the questionnaire also inquired about the learners' self-assessments of English and Spanish language skills, as well as about their writing practices and strategies. Additionally, the questionnaire included questions on the learners' general preferences of working alone or with a partner when engaged in a writing task. The attitudinal questions included in the language background questionnaire were not analyzed for the purposes of the present study.

3.3.2 MLA/DELE Spanish proficiency test

The proficiency level of the learners was measured by means of a proficiency test in Spanish, composed of two sections: a set of 30 multiple-choice questions on vocabulary, adapted from an MLA test, and a 20-item cloze passage test, used as part of the examination required to obtain the DELE (*Diploma de Español como Lengua Extranjera*), an official certification of Spanish proficiency issued by the Spanish Ministry of Education and Culture. This test has been widely used in other studies with both L2 and HL learners (Bowles, 2011; Montrul et al., 2008; Montrul & Perpiñán, 2011). Even though Carreira and Potowski (2011) question the validity of using the MLA/DELE exam as a measure of proficiency for HL learners, Montrul (2011b) found

that scores from this particular proficiency test correlated very highly with accuracy on a myriad of morphological recognition tasks for both L2 and HL learners.

The MLA/DELE proficiency test in this study was only intended to collect additional information as to the linguistic profile of the learners; test scores were not used to form dyads. Even though all the participants were enrolled in the same intermediate-level Spanish course, it would have been imprudent to assume that all of them had a comparable level of proficiency, and in fact, the results of the t-test presented above confirmed that was not the case. Therefore, having an independent measure of proficiency afforded a more thorough and reliable way of reporting the participants' proficiency level, which is an indispensable piece of information to interpret the results of any study.

3.3.3 Wordless picture story

A wordless picture book by Mercer Mayer (1975), titled *A Boy, a Dog, a Frog, and a Friend*, was used as the prompt to elicit written narratives. An advantage of using a wordless picture story rather than an open-ended prompt is that it allows a more reliable comparison of mixed and matched dyads in terms of their orientation to form, as it roughly normalizes the content of narratives. Other wordless picture stories by Mercer Mayer (commonly referred to as "frog stories") have been successfully used in linguistic research with children and adults to elicit oral narratives in several different languages (Bennett-Kastor, 2002; Berman & Slobin, 1994).

The story used in this study was especially selected for being relatively complex (i.e., students had to carefully look at the pictures to understand the plot) and for involving a wide array of characters (a boy, a dog, a frog, and a turtle) and actions (fishing, biting, jumping, falling, swimming, pulling, barking, digging, grabbing, etc.), thus increasing the chances that learners would engage in negotiation of meaning as well as form. By the same token, the story

was sufficiently simple for intermediate-level students to narrate, as demonstrated during pilot testing. In fact, one of the learners who participated in the pilot study made the following comment on the post-task questionnaire: "I liked that the story was something rather simple to work with but yet it still required you to think about some more difficult vocabulary." The story consisted of a total of 20 pictures[6], which was deemed appropriate to generate sufficient written and oral data in a 30-minute session. Using a shorter story would have probably resulted in fewer FFEs, and a longer story would have likely fatigued the participants.

3.4 Data collection procedure

All the data included in this study were collected in the Fall semester of 2010. Data collection was carefully scheduled to take place after the past tense, and especially the contrast between the preterit and the imperfect, had been covered in the course. Data collection spanned a 2-week period of time and took place in a classroom on campus. Approximately two weeks before the first session, participants completed the language background questionnaire online from home via the website www.surveygizmo.com. This information was used to identify L2 and HL learners who met the background requirements for inclusion in this study, as described above. Participants were then contacted by the researcher and signed up for a group of sessions (e.g., group 1 met Tuesdays at 5:00pm, group 2 met Wednesdays at 4:00pm, and so on). Each student signed up for one of the groups based on their availability. A maximum of 12 students were allowed to sign up in each group, which the researcher subsequently divided into dyads (resulting in up to 6 dyads per group), as described below.

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[6] The original story was slightly shortened without compromising the plot by removing some of the pictures. The reason for shortening the story was to minimize participant fatigue, especially since learners had to write the story again as part of the immediate post-treatment task.

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At the beginning of the first session, participants were assigned a research ID number, which was used in place of their names on the written narratives and audio-recorded interactions, and they were given some general instructions, which included: (a) using Spanish as much as possible when interacting with each other, (b) expressing themselves verbally rather than with gestures given that their interactions were not video-recorded, and (c) writing legibly. The researcher then formed dyads based exclusively on the learners' linguistic background: some L2 learners were paired with other L2 learners, and some L2 learners were paired with HL learners. Out of the 8 L2-L2 dyads, seven were matched-gender (6 female-female, 1 male-male), and only one was mixed-gender (male-female); out of the 8 L2-HL dyads, four were matched-gender (female-female), and four were mixed-gender (female-male). Learners were not paired based on their proficiency level, given that proficiency was not a variable manipulated in this study. To ensure the random assignment of students to dyads, the proficiency test was not even administered until the final session, after all pair work had been completed. Familiarity with other participants was not a factor taken into consideration to form pairs either, although it is likely that some students knew each other, given that they were all enrolled in the same course, although they may not have been in the same small discussion sections.

Students were then informed that they would collaboratively plan, draft, and edit a story in Spanish based on pictures. During the entire process, learners were not allowed to use dictionaries or consult with the researcher or other dyads. First, learners were provided with a copy of the wordless picture story *A boy, a dog, a frog, and a friend,* and they were instructed to work together to plan their narratives. During the planning phase, which lasted an average of 5 minutes, participants decided on the title and the characters' names, and they went over the story orally. Once all the dyads had had a chance to go over the story together, they were provided

with pens and paper, and they were instructed to write their narratives in the past. To control for scribe effects[7], both members of each dyad were told to write, but the two drafts had to be identical, as specified in the instructions. Moreover, in order to encourage learners to engage in negotiation rather than copying from each other's drafts, participants were specifically instructed not to look at their partner's paper while writing the story. To keep time on task as consistent as possible across dyads, all learners were given a time limit of 20 minutes to write out their stories. After writing the story, they were asked to compare drafts to ensure they were identical, and they were also given specific guidelines to edit their drafts collaboratively. They were told to check their drafts for certain morphosyntactic, lexical, and orthographic errors that L2 and HL learners tend to make, such as subject-verb agreement, literal translations, and absence of accent marks, among others. The complete set of instructions on planning, drafting, and editing is included in Appendix B.

Once all revisions had been made, the researcher collected all the written narratives, provided learners with more paper, and instructed them to write the same story again, but without assistance from their partners and without access to their first draft. Learners were asked to re-write their stories following their original plotline as closely as possible. The instructions for the individual writing tasks are also included in Appendix C. These "second drafts" constituted the immediate posttest. The delayed posttest, which took place two weeks later, followed the same procedure as the immediate posttest: all participants were given copies of the story *A boy, a dog, a frog, and a friend* and were asked to write the story individually and without access to previously written drafts. Lastly, in that final session, participants took the MLA/DELE proficiency test online via the website www.surveygizmo.com, where it was

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[7] Nixon (2007) found that the learners who assumed the role of the scribe within a dyad talked more than their partners, which could potentially affect the initiation and resolution of FFEs.

automatically scored. As compensation for their participation in the study, students received 4 extra credit points on the final exam[8].

3.5 Pilot study

A pilot study was conducted to assess the feasibility of the tasks and procedures outlined above, especially with respect to time on task and level-appropriateness of the writing prompt. Due to participant availability, only L2 learners were included in the pilot study. Given that the pilot study was part of the larger project on the effects of collaboration at different stages of the writing process, time on task was carefully recorded for each stage (planning, drafting, and editing). The vast majority of participants took approximately 5 minutes to plan their narratives collaboratively, they were able to write out the entire story in less than 20 minutes, and they spent an average of 4 minutes making revisions. Therefore, the researcher did not consider it necessary to modify the time limits specified in the instructions, with the exception of the time allotted for planning, which was reduced from 10 minutes to 6 minutes.

The writing prompt seemed to be appropriate for the proficiency level of the learners, as the majority was able to write the narrative without resorting to English for more than one or two words. Some participants expressed frustration over not being able to consult a dictionary. Even though asking learners to rely exclusively on interactional feedback without access to any reference materials was perhaps slightly artificial, it was a necessary condition to establish a connection between learner-learner interaction and learning. Allowing the learners to use other sources of information would have introduced confounding variables.

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[8] The researcher was not the instructor of any of the participants in this study. The faculty member in charge of the course kindly agreed to offer students extra credit as an incentive. All students enrolled in the course were allowed to participate in the study for extra credit. Those who did not meet the inclusion criteria (e.g., those whose L1 was not English or Spanish) followed the same procedure, but their data were not analyzed.

Lastly, during pilot testing, the researcher noted that some of the participants opted for copying from their partners' drafts instead of seeking help from them. As a result of this observation, the instructions were modified slightly to ask students expressly not to look at their partners' papers until the revision stage. Nevertheless, the task prompted a range of morphosyntactic, lexical, and orthographic FFEs, and thus it was deemed suitable for the purposes of the present study.

3.6 Transcription and coding procedure

Research questions were addressed by analyzing the interactions of the L2-L2 and L2-HL dyads, as well as the texts individually produced by the learners after the collaborative task. All verbal interactions were audio-recorded using portable digital recorders and then transcribed by the researcher. During the transcription process, the researcher occasionally used the learners' drafts as references for the coding procedure, especially in terms of resolution. Given that the learners were provided with black pens to write the story and red pens to edit their drafts, the researcher was able not only to track at what point in the process the changes were made, but also to corroborate the outcome of the resolution and to identify the supplier. Example 6 serves to illustrate how annotations based on the learners' texts help to understand the resolution of the FFE.

Example 6:

(HL)S12   *algo jaló*…would there be an accent?
                  something pulled… would there be an accent?
                  [*jaló* does not have an accent in black ink in S12's draft]

(L2)S48   [reading] *de repente, algo jaló la línea de pesca*
                  suddenly something pulled the fishing line
                  [*jaló* has an accent in black ink in S48's draft]

(HL)S12   *jaló la línea de pesca y Miguel se cayó en el lago*
                  pulled the fishing line and Miguel fell in the lake
                  [*jaló* has an accent written in red ink in S12's draft]

In this excerpt, S12 and S48 were revising their drafts collaboratively. S12 initiates a preemptive

FFE seeking her partner's assistance with an orthographic query when she notices a gap between

her output (without the accent) and her partner's output (with an accent), which was indeed the

target form. Her partner, S48, resolves the FFE implicitly by reading from her draft, in which the

word in question was spelled with an accent. Given the fact that S12 added the accent in red ink

in her draft, the FFE was coded as having been resolved by S48 in a more targetlike way.

3.6.1 Coding of FFEs

    Following Ellis et al. (2001a), FFEs were identified as "each point in the recording where

the attention to linguistic form started" up to the point "when either the topic changed back to a

focus on meaning or, sometimes, to a focus on a different linguistic form" (p. 294). However, as

explained in Chapter 1, points in the recording where learners verbalized a linguistic quandary

but did not engage in any sort of negotiation with their partners were not coded as FFEs.

Moreover, instances in which learners revisited FFEs that had already been discussed in the

course of the task were not coded as new FFEs, but rather as continuations of the previous FFEs.

In some cases, learners asked their partners the same question on more than one occasion

(typically, at different points in the writing process). In other cases, FFEs that were initiated and

abandoned during the planning phase were resolved as learners were writing or editing their drafts.

FFEs were classified according to: (1) type (preemptive or reactive, as defined in chapter 1), (2) linguistic focus (morphosyntactic, lexical, or orthographic), and (3) outcome (more targetlike, less targetlike, or unresolved). Morphosyntactic FFEs were considered to be those targeting issues of inflectional and derivational morphology, articles, determiners, prepositions, pronouns, etc. Lexical FFEs involved issues regarding word choice, word meaning, and semantic distinctions (e.g., *ser/estar*, *ver/mirar*, etc.). Orthographic FFEs revolved around spelling and accent placement. Following previous research on learner-learner interaction (Adams, 2007; Bowles, 2011; LaPierre, 1994; Ross-Feldman, 2007; Swain & Lapkin, 1998), the outcome of each FFE was determined to be more targetlike or less targetlike than the trigger according to whether the resolution the learners agreed upon was in the direction of the target form or not. FFEs were coded as being unresolved when learners abandoned the issue due to not knowing the answer or being otherwise unable to reach an agreement. Furthermore, FFEs were coded according to which learner was the initiator, defined as "the learner who first questioned the language being used" (Bowles, 2011, p. 38), and which learner was the supplier of the resolution to the FFE (cf. Williams, 2001a). It was not only necessary to identify the initiator and the supplier in the case of L2-HL interaction to answer the second research question, but it was also important in L2-L2 interaction to facilitate the process of tracing the targets of the FFEs in the texts produced by the learners in the immediate and two-week delayed post-treatment individual writing tasks.

Example 7 below illustrates the coding procedure implemented on an excerpt from one of the L2-HL dyads.

Example 7:

1	(L2)S110	*¿cómo se dice* 'dragged'? how do you say 'dragged'?
2	(HL)S196	*arrastró*, *lo arrastró* dragged, dragged it
3	(L2)S110	*¿arrastró? ¿Con acento o no*? dragged? With an accent or not?
4	(HL)S196	*arrastró... arrastró*… I don't know dragged... dragged... I don't know
5	(L2)S110	*arrastró, porque es en el pasado, ¿no?* dragged [with accent] because it's in the past, right?
6	(HL)S196	OK, *arrastró … dentro del río* OK, dragged [with accent]... into the river

In line 1, S110 (L2 learner) initiated a preemptive lexical FFE, which was resolved in a more targetlike manner by S196 (HL learner). In line 3, S110 initiates another preemptive FFE but this time orthographic in nature. Even though S196 is unable to provide an answer to his partner's query (line 4), S110 supplies the targetlike resolution in line 5, which is then agreed upon by both learners. Example 7 also serves to point out that, in some cases, the initiator and the supplier of a preemptive FFE were the same learner (as in the orthographic FFE in the excerpt), but in other cases, the initiator and the supplier were different (as in the lexical FFE in the excerpt).

In the case of reactive FFEs, the initiator and the supplier tended to be the same learner, as in the excerpt in example 2 presented in Chapter 1. However, in a few instances, the corrections proposed by the initiators were not accepted by their partners, who then resolved the FFEs. For instance, in example 8 below, S21 initiates a reactive FFE but her partner, S127, rejects her suggestion and resolves the FFE.

Example 8:

| (L2)S21 | *el chico se llamaba…* |
| | the kid was-IMP called… |

| (L2)S127 | *el chico quien se llama Pedro estaba pescando* |
| | the kid who is called Pedro was fishing |

| (L2)S21 | *sí…. El chico… ¿quien se llama o quien se llamaba?* |
| | yeah… the kid… who is called or who was-IMP called? |

| (L2)S127 | um… *quien se llama* |
| | um... who is called |

(L2)S21	ok
(L2)S127	or… *¿llamó?*
	or… was-PRET called?

| (L2)S21 | *¿llamó?* |
| | was-PRET called? |

| (L2)S127 | I think it's ok to be in the present for things like that |

| (L2)S21 | ok |

In this example, S21 initiates a reactive FFE when she notices a mismatch between her partner's production and her own production. She questions the use of present tense by her partner since learners were told to narrate the story in the past, and instead she proposes the imperfect tense form *llamaba*. After briefly considering the possibility of using past tense, S127 ends up resolving the FFE by justifying her initial choice of present tense, despite the fact that her partner's suggestion was actually more targetlike.

3.6.2 Coding of incorporation of linguistic information

As explained above, learning outcomes were determined by the incorporation of linguistic information provided during interaction in subsequent individual drafts. Thus, in the event of a resolved FFE (regardless of its targetlikeness), the supplier was identified, and the

corresponding resolution (i.e., the linguistic feature that was the target of the FFE) was traced in the texts individually written by the supplier's partner. Then, the following scheme was applied:

1. If a learner had used the form provided by the 'supplier' (i.e., his/her partner), it was coded as incorporated (INC).

2. If a learner had demonstrated the need to use the form provided by the 'supplier' but had failed to use it, it was coded as not incorporated (NI).

3. If a learner had somehow circumvented the need to use the form provided by the 'supplier,' it was coded as not attempted (NA). Most of these were cases of omission or rewording of certain parts of the jointly-produced story in subsequent individual drafts.

For instance, referring back to the FFEs in the excerpt in example 7 above, the lexical item '*arrastró*' was traced in S110's immediate and delayed post-treatment individual narratives to determine whether the information provided by S196 was retained or not. On the immediate posttest, S110 used the target form '*arrastró*' in the phrase "*la tortuga le arrastró dentro del río*" ('the turtle dragged him into the water'), and thus it was coded as INC. In the delayed posttest, however, S110 wrote "*la tortuga forceó el perro debajo del río*" ('the turtle forced [incorrect use] the dog under the river'). Since the learner demonstrated a need for the lexical item provided in interaction but failed to produce it in a targetlike manner, it was coded as NI. In the case of the orthographic FFE, where the supplier was S110, the use of the accent mark on '*arrastró*' was traced in S196's immediate and delayed individual drafts. On the immediate posttest, S196 wrote "*arrastro*" without the accent mark, and so it was coded as NI. On the delayed posttest, S196 reworded that part of the story slightly by using a different verb ("*algo jaló al perro dentro del agua*", 'something pulled the dog into the water'), and thus it was coded as NA.

It is important to note that the information from morphological and orthographic FFEs was traced for specific items, or exemplars, rather than for evidence of rule learning (cf. Skehan, 1998). Therefore, in the case of the orthographic FFE revolving around "arrastró" ('dragged'), what was coded was whether or not S196 learned that "*arrastró*" has a written accent mark on the '*o*', rather than whether or not he learned that the third person singular inflection of regular −AR verbs in the preterit is spelled with a written accent. While demonstrating having learned the rule would be perhaps the best evidence of L2 development, this study focused only on knowledge retention of particular items, following previous research in the field of interactionist SLA (Adams, 2007; Bitchener, 2004; LaPierre, 1994; Loewen, 2005; Swain & Lapkin, 1998; Williams, 2001). It would not be feasible to determine from the current dataset whether interaction led to rule learning or not.

3.6.3 Inter-rater reliability

The researcher transcribed and coded all of the data. In addition, the transcriptions from 2 of the 16 dyads (12.5% of the data) were randomly selected to be independently coded by another rater, who is an experienced college-level instructor of Spanish as a foreign language and has near-native fluency in Spanish. The two dyads that both raters coded accounted for approximately 26% of the FFEs. All instances of agreement and disagreement between raters were counted, and the percentage of inter-rater agreement was calculated for each category in the coding scheme, as reported in table 3.2 below.

Table 3.2

Inter-rater percentage of agreement by coding category

FFE Identification	89%
Type (preemptive, reactive) [a]	94%
Linguistic focus[a]	99%
Outcome[a]	94%
Initiator[a]	91%
Supplier[a]	87%
Incorporation in immediate posttest[a]	98%
Incorporation in delayed posttest[a]	94%

a. Calculated out of the 99 FFEs initially identified as such by both raters

Overall, inter-rater agreement was high (over 85% in all of the coding categories). Nonetheless, the researcher and the second rater met and discussed those cases in which their coding decisions did not match until 100% agreement was reached on all of the coding categories (cf. Bowles, 2011; Philp, Oliver, & Mackey, 2006). During the process of coding socialization, it was discovered that the majority of mismatches in terms of identification of FFEs stemmed from the fact that the second rater coded follow-up moves[9] as additional FFEs, whereas the researcher considered them to be part of a single FFE. It was then agreed that follow-up moves referring to the same linguistic problem did not constitute separate FFEs. Moreover, the relatively low percentage of agreement in terms of which learner was the supplier of information (87%) was found to be due to the fact that in some cases the second rater assigned

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[9] For example, when a learner inquired about how to say "to bury" in Spanish, her partner responded with an alternative in English ("to dig a hole?") perhaps in the hopes that the circumlocution would result in a successful co-constructed resolution.

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the role of supplier to the last learner who had agreed with the resolution rather than to the

learner who had provided the resolution. After taking a closer look at those particular cases[10], the

second rater concurred with the researcher in that the supplier was the learner who had first

provided the agreed upon resolution.

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[10] For instance, when a learner indicated to his partner that '*muerta*' ('dead', fem.) was the adjective form they needed to use to describe the turtle ('*la tortuga*', fem.), his partner replied "oh, you're right, because it's la tortuga." The second rater initially assigned the role of supplier to the learner who had supplied the reason ("because it's *la tortuga*"). However, during coding socialization, it became clear that the acknowledgment "you're right" was an indication that the other learner had actually supplied the resolution.

4.0 Overview

As described in the previous chapter, research questions were addressed by analyzing the

audio-recorded interactions of the L2-L2 and L2-HL dyads, as well as the drafts from the

immediate and delayed post-treatment individual writing tasks. The audio-recorded data

consisted of 509 minutes of learner-learner interaction. Time on task for L2-L2 dyads ranged

from 29-34 minutes (*M*=31), and time on task for L2-HL dyads ranged from 22-38 minutes

(*M*=33). The written data included a total of 64 individually-produced drafts (2 per learner: one

immediate, one delayed) that ranged in number of words from 98-234 (*M*=181).

The FFEs were tallied by dyad type and by learner type for each of the categories

outlined in Chapter 3: type of FFE (preemptive, reactive), linguistic focus (morphosyntactic,

lexical, orthographic), outcome (more targetlike, less targetlike, unresolved), and incorporation

of the resolution in the immediate and delayed post-treatment tasks (INC, NI, NA). The data

were analyzed by means of t tests and z tests using SPSS 20, as well as chi-square tests using the

online calculators developed by Missouri State University[11] and VassarStats[12]. The alpha level

for all statistical analyses was set at .05. The following sections detail the results of the statistical

analyses conducted to answer each of the research questions presented in Chapter 2.

4.1 Research question 1: Focus on form during interaction in L2-L2 versus L2-HL dyads

Research question 1 asked: Do L2-L2 and L2-HL dyads differ in terms of their focus on

form during interaction? Specifically, are there any differences in (a) the number of FFEs, (b) the

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[11] Missouri State University. (n.d.). RStats Institute: Tables and Calculators. [Computer software]. Available from http://www.missouristate.edu/rstats

[12] Lowry, R. (n.d.). VassarStats: Web Site for Statistical Computation. [Computer software]. Available from http://vassarstats.net/index.html

type of FFEs, (c) the linguistic focus of FFEs, and (d) the outcome of FFEs? The effect of dyad

type on each of these four variables was examined through descriptive and inferential statistics.

4.1.1 Research question 1a: Number of FFEs

The descriptive statistics of the total number of FFEs that arose in each dyad type (L2-L2,

L2-HL) are summarized in Table 4.1 below. In the 8 matched dyads, there were a total of 182

FFEs. The amount of focus on form varied across L2-L2 dyads, with a range of 13-35 FFEs per

dyad ($M=22.75$, $SD=9.60$). Similarly, the 8 mixed dyads engaged in a total of 196 FFEs, and

there was considerable variation in the number of FFEs across dyads, with a range of 10-58 FFEs

per dyad ($M=24.5$, $SD=16.2$). Numerous studies on learner-learner interaction have also reported

variation in the amount of incidental focus on form across dyads[13] (Bowles, 2011a, in press;

Fernandez-Dobao, 2012; Storch, 2001; Swain & Lapkin, 1998; Watanabe & Swain, 2007).

Table 4.1
Descriptive statistics of total number of FFEs by dyad type

| | **Dyad type** | |
	L2-L2	*L2-HL*
Sum	182	196
Range	13-35	10-58
M	22.75	24.5
SD	9.60	16.2

An independent-samples t-test was performed to determine whether L2-L2 and L2-HL dyads

differed significantly in terms of the total number of FFEs. Results showed no significant

differences between the two types of dyads ($t(14)=.26$, $p=.80$), suggesting that a statistically

similar number of FFEs occurred in matched and mixed dyads.

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[13] Considering that some learners might be more inclined to engage in negotiation of form than others, variation in the number of FFEs or LREs across NNS-NNS dyads is more common than in NS-NNS interaction, where the NS (i.e., teacher or researcher) is usually trained to provide feedback to the learners.

To determine whether L2-L2 and L2-HL dyads differed with respect to the frequency of preemptive versus reactive FFEs, the total number of each type of FFE that occurred in each type of dyad was tallied, and a 2x2 contingency Table was created (Table 4.2). The frequencies showed that roughly equal proportions of preemptive FFEs were initiated in matched and mixed dyads (55.5% and 52%, respectively). Similarly, the proportions of reactive FFEs in L2-L2 and L2-HL dyads were comparable (44.5% and 48%, respectively).

Table 4.2
2x2 Contingency table: Frequency of preemptive and reactive FFEs by dyad type

			FFE type		
			Preemptive	Reactive	Total
Dyad type	L2-L2	Count	101	81	182
		Row %	55.5%	44.5%	100%
	L2-HL	Count	102	94	196
		Row %	52%	48%	100%
	Total		203	175	378

A chi-square test was performed to determine whether there was a significant association between FFE type and dyad type. Results showed that there were no significant differences between mixed or matched dyads in terms of the occurrence of preemptive and reactive FFEs ($\chi^2=0.45$, $p=0.50$). In other words, both types of FFEs occurred equally as often in both types of dyads.

4.1.3 Research question 1c: Linguistic focus of FFEs

To determine whether there was a difference between matched and mixed dyads in terms of the linguistic focus of FFEs, the total number of morphosyntactic, lexical, and orthographic

FFEs that occurred in each type of dyad was tallied, and a 3x2 contingency table was created

(Table 4.3).

Table 4.3
3x2 Contingency Table: Linguistic focus of FFEs by dyad type

			Linguistic focus			
			Morph	Lex	Orth	Total
Dyad type	L2-L2	Count	69	79	34	182
		Row %	37.9%	43.4%	18.7%	100%
	L2-HL	Count	75	63	58	196
		Row %	38.3%	32.1%	29.6%	100%
		Total	144	142	92	378

The frequencies demonstrated that a similar proportion of morphosyntactic FFEs was initiated in

L2-L2 dyads (37.9%) and L2-HL dyads (38.3%). With respect to lexical FFEs, they occurred

43.4% of the time in L2-L2 dyads and 32.1% of the time in L2-HL dyads. The proportion of

orthographic FFEs was higher in mixed dyads (29.6%) than in matched dyads (18.7%). The

distribution of FFEs by linguistic focus in matched and mixed dyads is represented in Figure 4.1

below.

Figure 4.1
Proportion of FFEs by linguistic focus and dyad type
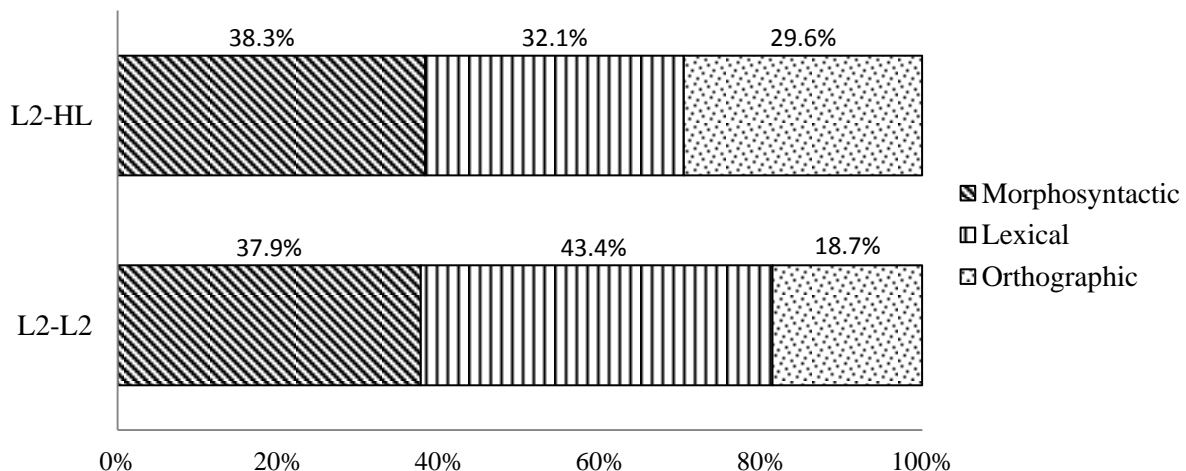
A chi-square test revealed that there was a significant difference between the two dyad types with respect to the frequency of FFEs of different linguistic focus (χ^2=7.81, p=0.02). While this finding indicates that there are significant differences within the whole table, it does not specify exactly how the two groups differ. Therefore, to identify precisely which proportions were significantly different between groups, two-proportion z-tests were carried out for morphosyntactic, lexical, and orthographic FFEs. Results showed a significant difference between mixed and matched dyads in the proportion of orthographic FFEs (z=2.52, p=.01), as well as in the proportion of lexical FFEs (z=2.33, p=.02), but there was no significant difference between groups in the proportion of morphosyntactic FFEs (z=.12, p=.91). In other words, orthographic FFEs occurred significantly more often in L2-HL dyads than in L2-L2 dyads, whereas lexical FFEs were significantly more frequent in L2-L2 dyads than in L2-HL dyads. Morphosyntactic FFEs, on the other hand, occurred equally as often in both types of dyads.

4.1.4 Research question 1d: Outcome of FFEs

To determine whether L2-L2 and L2-HL dyads differed in terms of the outcome of FFEs, the total number of FFEs that occurred in each type of dyad was first tallied according to whether they had been resolved or not, and a 2x2 contingency table was created (table 4.4). The frequencies show that a resolution was reached in the majority of FFEs in both L2-L2 and L2-HL dyads (85.2% and 97.4%, respectively). Twenty-nine of the 183 FFEs in L2-L2 dyads (14.8%) were left unresolved, and only 5 of the 196 FFEs in L2-HL dyads (2.6%) were not resolved.

Table 4.4
2x2 Contingency table: Outcome of FFEs by dyad type

| | | **Outcome** | | |
		Resolved	Unresolved	Total
Dyad type L2-L2	Count	155	27	182
	Row %	85.2%	14.8%	100%
L2-HL	Count	191	5	196
	Row %	97.4%	2.6%	100%
	Total	346	32	378

The results of a chi-square test showed that FFEs were resolved significantly more often in L2-HL dyads than in L2-L2 dyads (χ^2=18.38, *p*<.0001, Cramer's V=.22). In other words, a significantly greater proportion of FFEs were left unresolved in matched dyads than in mixed dyads.

Resolved FFEs were then analyzed further to determine whether there was a difference between in L2-L2 and L2-HL dyads with respect to the targetlikeness of the resolution. To this end, a 2x2 contingency table was created with the number of FFEs in each type of dyads that had a more targetlike (MTL) and less targetlike (LTL) resolution (table 4.5).

Table 4.5
2x2 Contingency table: Targetlikeness of resolution of FFEs by dyad type

| | | **Targetlikeness of resolution** | | |
		More TL	Less TL	Total
Dyad type L2-L2	Count	121	34	155
	Row %	78.1%	21.9%	100%
L2-HL	Count	168	23	191
	Row %	88%	12%	100%
	Total	289	57	346

The frequencies demonstrate that in both matched and mixed dyads, the majority of FFEs were resolved in a more targetlike way: 78.1% of the 154 resolved FFEs in L2-L2 dyads and 88% of the 191 resolved FFEs in L2-HL dyads. The proportion of FFEs with a less targetlike resolution was higher in L2-L2 dyads (21.9%) than in L2-HL dyads (12%). To verify whether differences between dyad types were significant or not, a chi-square test was conducted. Results showed that L2-HL dyads had reached more targetlike resolutions significantly more often than L2-L2 dyads (χ^2=6.09, p=.01), although the effect size was relatively small (Cramer's V=.13).

4.2 Research question 2: Focus on form during interaction within L2-HL dyads

The second research question asked: Do HL learners and L2 learners in L2-HL dyads differ in terms of their focus on form during interaction? Specifically, are there any differences between L2 and HL learners in (a) the frequency of initiation of FFEs, (b) the frequency of initiation of preemptive and reactive FFEs, (c) the frequency of resolution of FFEs, and (d) the linguistic focus of successfully resolved FFEs? The results of the descriptive and inferential statistics used to address each of these four variables are presented below.

4.2.1 Research question 2a: Initiation of FFEs

To determine whether one learner (L2 or HL) initiated FFEs more often than the other, all of the FFEs that occurred in L2-HL dyads were tallied according to which learner was the initiator, and a 1x2 contingency table was created (table 4.6). The frequencies show that L2 learners initiated 63% FFEs that arose in L2-HL dyads, whereas HL learners initiated 37% of them.

Table 4.6
1x2 Contingency table: Total number of FFEs by initiator

		Initiator		
		L2	HL	Total
Total	Count	123	73	196
FFEs	Row %	63%	37%	100%

A one-way chi-square test was run to determine whether the proportion of FFEs initiated by L2 learners was significantly different from the proportion of FFEs initiated by HL learners Results showed that this difference was indeed significant (χ^2=12.76, *p*=0.004), with a medium effect size (Cramer's V=.26), suggesting that L2 learners initiated FFEs significantly more often than HL learners.

4.2.2 Research question 2b: Initiation of preemptive and reactive FFEs

To determine whether one learner (L2, HL) initiated one type of FFE more often than the other, a 2x2 contingency table was produced reflecting the total number of preemptive and reactive FFEs initiated by L2 and HL learners in L2-HL dyads (Table 4.7).

Table 4.7
2x2 Contingency table: Preemptive and reactive FFEs by initiator

			FFE type		
			Preemptive	Reactive	Total
	L2	Count	76	47	123
		Row %	61.8%	38.2%	100%
Initiator					
	HL	Count	26	47	73
		Row %	35.6%	64.4%	100%
		Total	102	94	196

The frequencies indicate that 61.8% of the FFEs initiated by L2 learners were preemptive, and only 38% were reactive. However, the opposite pattern emerged with respect to

the FFEs initiated by HL learners: the majority (64.4%) were reactive, and just 35.6% were

preemptive. The asymmetry between L2 and HL learners in terms of the initiation of preemptive

and reactive FFEs can be clearly seen in Figure 4.2 below.

Figure 4.2
Proportion of total FFEs by type and initiator
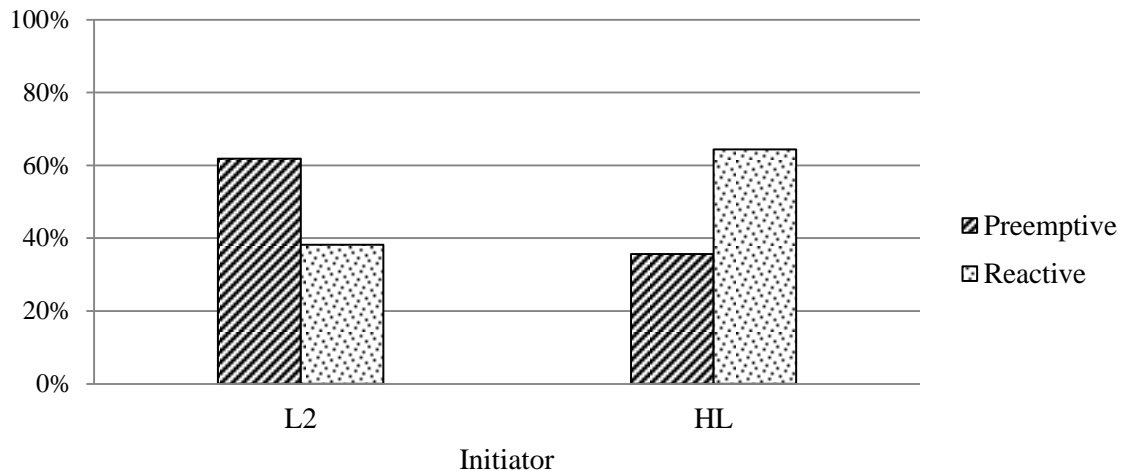
A chi-square test revealed a significant association between the type of FFE and which

learner was the initiator ($\chi^2=12.57$, $p=0.004$, Cramer's V=-.25). In other words, the L2 learners

and the HL learners differed significantly in the type of FFE they most often initiated. L2

learners initiated preemptive FFEs significantly more often than reactive FFEs, whereas the

exact opposite was true for the HL learners: they initiated reactive FFEs significantly more often

than preemptive FFEs.

4.2.3 Research question 2c: Resolution of FFEs

To determine whether one learner (L2, HL) resolved FFEs more often than the other,

only the FFEs that were resolved (in a more targetlike way or not) were tallied according to

which learner was the supplier, and a 1x2 contingency table was created (Table 4.8). Out of the

191 FFEs that were resolved, 61 (32%) were resolved by the L2 learners, and more than twice as

many (68%) were resolved by the HL learners.

Table 4.8
1x2 Contingency Table: Total number of FFEs by supplier

		Supplier		Total
		L2	HL	
Total	Count	61	130	191
FFEs	Row %	32%	68%	100%

A one-way chi-square was conducted to determine whether the difference between the

proportion of FFEs resolved by L2 learners and the proportion of FFEs resolved by HL learners

was statistically significant or not. Results showed that there was a significant difference

(χ^2=24.93, p<0.001), with a medium to large effect size (Cramer's V=.36), indicating that HL

learners resolved FFEs significantly more often than L2 learners.

4.2.4 Research question 2d: linguistic focus of successfully resolved FFEs

To determine whether one learner (L2 or HL) resolved FFEs of different linguistic focus

(morphosyntactic, lexical, orthographic) in a targetlike way more often than the other, resolved

FFEs (n= 191) were examined in further detail through a two-step process. First, resolved FFEs

were tallied according to which learner was the supplier (L2, HL) and whether the resolution was

more targetlike (MTL) or less targetlike (LTL). This information was used to generate a 2x2

contingency table (Table 4.9). The frequencies showed that the majority of FFEs were resolved

in a more targetlike way by both L2 and HL learners. A chi-square test confirmed that both types

of learners provided targetlike resolutions to the FFEs equally as often (χ^2=1.25, p=0.26).

Table 4.9
2x2 Contingency table: Targetlikeness of resolution of FFEs by supplier

			Targetlikeness of resolution		
			More TL	Less TL	Total
Supplier	L2	Count	56	5	61
		Row %	91.8%	8.2%	100%
	HL	Count	112	18	130
		Row %	86.2%	13.8%	100%
		Total	168	23	191

Then, FFEs that were resolved in a more targetlike way (n=168) were tallied according to their linguistic focus (morphosyntactic, lexical, and orthographic) and which learner was the supplier of the more targetlike resolution, and a 3x2 contingency table was created (Table 4.10).

Table 4.10
3x2 Contingency table: Successfully resolved FFEs by linguistic focus and supplier

			Linguistic focus			
			Morph	Lex	Orth	Total
Supplier	L2	Count	19	9	28	56
		Row %	33.9%	16.1%	50%	100%
	HL	Count	50	45	17	112
		Row %	44.6%	40.2%	15.2%	100%
		Total	69	54	45	168

The frequencies show that out of all the FFEs that were successfully resolved by L2 learners, half of them (50%) had to do with orthography, 33.9% revolved around morphosyntactic issues, and only 16.1% were lexical in nature. In contrast, most of the FFEs that were successfully resolved by HL learners dealt with morphosyntax (44.6%) and vocabulary (40.2%), whereas just 15.2% revolved around spelling or accent placement. The results of a chi-square test revealed a significant association between the linguistic focus of the FFE and which learner had supplied

the targetlike resolution (χ^2=24.69, p<.0001). Two-proportion z-tests were then conducted to identify the source of the difference or differences. There was not a significant difference between L2 and HL learners in terms of correctly resolving morphosyntactic FFEs (z=1.35, p=.18). However, there was a significant difference between L2 and HL learners with respect to successful resolution of lexical FFEs (z=3.54, p=.0004) and orthographic FFEs (z=4.64, p<.0001). As can be seen in Figure 4.3, L2 and HL learners were able to provide a more targetlike resolution to morphosyntactic FFEs with approximately the same frequency, but HL learners successfully resolved lexical FFEs significantly more often than their L2 counterparts, and L2 learners correctly resolved orthographic FFEs significantly more often than the HL learners.

Figure 4.3
Proportion of successfully resolved FFEs by linguistic focus and supplier
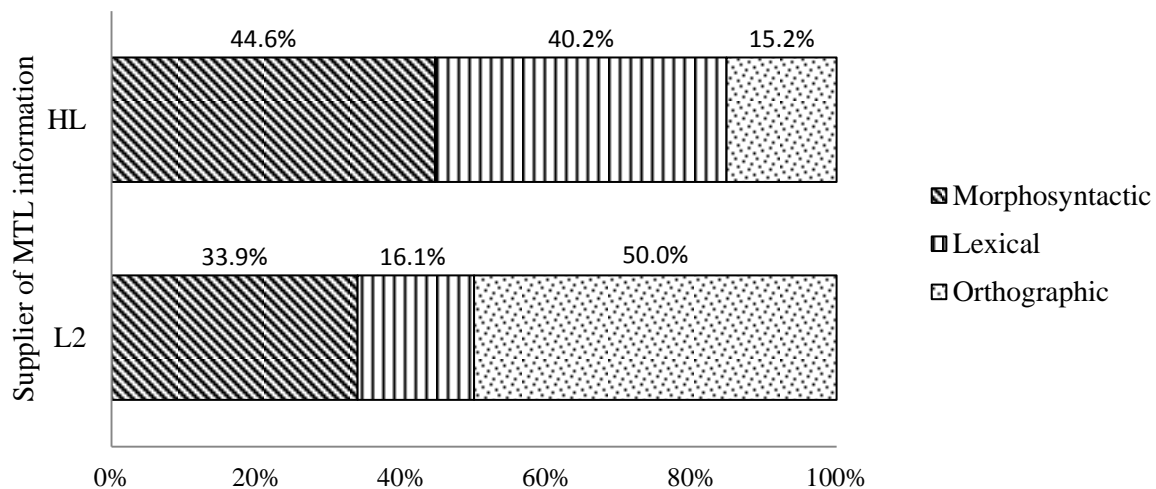
4.3 Research question 3: Learning gains from interaction in L2-L2 versus L2-HL dyads

The third research question was aimed at comparing the learning gains from L2-L2 interaction and the learning gains from L2-HL interaction. As was described in Chapter 3, learning gains were measured by the use of linguistic information from successfully resolved

FFEs in subsequent individual writing tasks[14]. Research question 3 asked whether L2-L2 and L2-HL dyads differ with respect to the overall rate of incorporation of linguistic information, and, more specifically, whether there are any differences according to (a) the type of FFEs (preemptive, reactive), and (b) the linguistic focus of FFEs (morphosyntactic, lexical, orthographic).

4.3.1 Overall learning gains

4.3.1.1 Immediate Post-treatment Task

The FFEs that were resolved in a more targetlike way in L2-L2 dyads (n=121) and L2-HL dyads (n=168) were tallied according to the three categories in the coding scheme outlined in Chapter 3, namely: incorporated (INC), not incorporated (NI), or not attempted (NA). It was found that learners in both dyad types attempted to use the target items, as there were only 21 NA cases out of the 121 resolved FFEs in L2-L2 dyads (17.4%), and 26 NA cases out of the 168 in L2-HL dyads (21.4%). The fact that the frequency of NA was low speaks to the effectiveness of the task in eliciting the use of specific linguistic information from the FFEs in a meaningful context.

To determine whether L2-L2 and L2-HL dyads differed in terms of the rate of incorporation of information, only the attempted cases (INC and NI) were submitted to statistical analyses. By excluding the NA cases, the proportions reflect more accurately whether the

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[14] Incorporation of less targetlike information was analyzed separately. Results showed that there were no significant differences between L2-L2 and L2-HL dyads in terms of the proportion of incorporated less targetlike information either in the immediate posttest (69% for L2-L2 dyads; 62.5% for L2-HL dyads) or in the delayed posttest (35% for L2-L2 dyads; 16.7% for L2-HL dyads). In the immediate posttest, the rate of incorporation of less targetlike information was comparable to that of more targetlike information, but in the delayed posttest, the rate of incorporation of less targetlike information was considerably lower than that of more targetlike information, suggesting that even though learners initially learned non-targetlike forms from their partners, knowledge of inaccurate information was not retained over time as much as knowledge of accurate information.

information was incorporated or not, without "penalizing" learners for omitting or rewording parts of the story. First, a 2x2 contingency table was created (table 4.11). The frequencies show that out of the 100 instances in which learners from L2-L2 dyads attempted to produce forms provided during interaction, 82 (82%) were successfully incorporated and 18 (18%) were not. In the case of mixed dyads, the number of instances in which learners attempted to use information from FFEs was slightly higher than that of matched dyads (n=132), but the rate of successful incorporation was lower (66.7%).

Table 4.11
2x2 Contingency table: Incorporation of information from FFEs in the immediate posttest by dyad type

| | | | Incorporation | | |
			INC	NI	Total
Dyad type	L2-L2	Count	82	18	100
		Row %	82%	18%	100%
	L2-HL	Count	88	44	132
		Row %	66.7%	33.3%	100%
		Total	170	62	232

A chi-square test revealed that there was a significant difference between the two types of dyads in terms of the proportion of targetlike use of the form provided during interaction (χ^2=6.83, *p*=.009, Cramer's V=.-17). This finding indicates that learners in L2-L2 dyads incorporated information from the FFEs in the immediate individual writing task significantly more often than learners in L2-HL dyads.

4.3.1.2 Delayed post-treatment task

The same procedure was used to analyze the data from the two-week delayed post-treatment individual writing task. First, the FFEs were tallied according to whether the information from FFEs had been incorporated (INC), not incorporated (NI), or not attempted

(NA). There was a greater proportion of NA cases (40% in L2-L2 dyads, 41% in L2-HL dyads) than in the immediate posttest, which was to be expected given that two weeks had passed since the collaborative drafting of the original story. Even though learners were asked to follow their original plotline as closely as possible, they were not expected to remember the story they wrote together word-by-word.

Once again, statistical analyses were conducted only on the attempted cases (INC and NI). First, a 2x2 contingency table was created with the total tallies of INC and NI for each dyad type (Table 4.12). The frequencies show that learners in L2-L2 dyads incorporated information from correctly-resolved FFEs in the delayed posttest 62.5% of the time, whereas learners in L2-HL dyads only did so 43.9% of the time.

Table 4.12
2x2 Contingency table: Incorporation of information from FFEs in the delayed posttest by dyad type

| | | | Incorporation | | |
			INC	NI	Total
Dyad type	L2-L2	Count	45	27	72
		Row %	62.5%	37.5%	100%
	L2-HL	Count	43	55	98
		Row %	43.9%	56.1%	100%
		Total	88	82	170

A chi-square test was run to determine whether dyads differed significantly in terms of the incorporation of information from FFEs in the delayed post-treatment task. Results confirmed that there was a significant difference between dyad types ($\chi^2=5.76$, $p=.01$, Cramer's V=-.18), showing that learners in matched dyads successfully used information from FFEs significantly more often than learners in mixed dyads. Thus, the trend found for the immediate post-treatment task was also true for the delayed post-treatment task. By the same token, these results suggest

that learners in L2-HL dyads showed overall poorer knowledge retention than learners in L2-L2 dyads. The question that arises, then, is whether the linguistic background of the learner (L2, HL) had a differential effect on the rate of subsequent use of linguistic information. The results for the fourth research question, presented later in this chapter, help to shed more light on this issue by examining whether L2 or HL learners in mixed dyads incorporated information from FFEs more often than the other.

4.3.2 Learning gains by type of FFE

4.3.2.1 Immediate post-treatment task

To determine whether L2-L2 and L2-HL dyads differed in terms of the rate of incorporation of linguistic information from preemptive versus reactive FFEs, correctly-resolved FFEs in each type of dyad were tallied according to type (preemptive, reactive) and incorporation (INC, NI). NA cases were once again excluded for the reasons discussed above. Two separate 2x2 contingency tables were created, one for preemptive FFEs (Table 4.13) and one for reactive FFEs (Table 4.14). The frequencies showed learners in L2-L2 dyads incorporated information from preemptive FFEs in the immediate posttest slightly more often than learners in L2-HL dyads (87% versus 70.6%). Similarly, information from reactive FFEs was successfully used by learners in matched dyads more frequently than by learners in L2-HL dyads (77.8% versus 62.5%).

Table 4.13
2x2 Contingency table: Incorporation of information from preemptive FFEs in the immediate posttest by dyad type

			Incorporation		
			INC	NI	Total
Dyad type	L2-L2	Count	40		46
		Row %	87%	13%	100%
	L2-HL	Count	48	20	68
		Row %	70.6%	29.4%	100%
		Total	88	26	114

Table 4.14
2x2 Contingency table: Incorporation of information from reactive FFEs in the immediate posttest by dyad type

			Incorporation		
			INC	NI	Total
Dyad type	L2-L2	Count	42		54
		Row %	77.8%	22.2%	100%
	L2-HL	Count	40	24	64
		Row %	62.5%	37.5%	100%
		Total	82	36	118

Two separate chi-square tests were run: one for the frequencies in Table 4.13 (preemptive FFEs) and one for the frequencies in Table 4.14 (reactive FFEs). Results revealed that there was a significant difference between the two types of dyads with respect to the rate of incorporation of information from preemptive FFEs in the immediate post-treatment task (χ^2=4.18, *p*=.04, Cramer's V=-.19). However, there was not a significant difference between L2-L2 and L2-HL dyads in their incorporation of information from reactive FFEs in the immediate post-treatment task, though it approached statistical significance (χ^2=3.22, *p*=.07). In other words, information from preemptive FFEs was incorporated by L2-L2 dyads significantly more often than by L2-HL

dyads, whereas information from reactive FFEs was incorporated by both dyad types equally as often.

4.3.2.2 Delayed post-treatment task

A similar procedure was used to determine whether information from preemptive or reactive FFEs was incorporated more often in the two-week delayed post-treatment task by learners in each type of dyad. First, correctly-resolved FFEs were tallied according to type and subsequent incorporation in the delayed posttest (INC, NI), and two separate 2x2 contingency tables were created: one for preemptive FFEs (Table 4.15) and one for reactive FFEs (Table 4.16).

Table 4.15
2x2 Contingency table: Incorporation of information from preemptive FFEs in the delayed posttest by dyad type

			Incorporation		Total
			INC	NI	
Dyad type	L2-L2	Count	25		39
		Row %	64.1%	35.9%	100%
	L2-HL	Count	23	25	48
		Row %	47.9%	52.1%	100%
		Total	48	39	87

Table 4.16
2x2 Contingency table: Incorporation of information from reactive FFEs in the delayed posttest by dyad type

			Incorporation		Total
			INC	NI	
Dyad type	L2-L2	Count	20		33
		Row %	60.6%	39.4%	100%
	L2-HL	Count	20	30	50
		Row %	40%	60%	100%
		Total	40	43	83

As was the case with the immediate post-treatment task, the frequency of incorporation of information from preemptive FFEs in the delayed posttest by learners in L2-L2 dyads was higher than by learners in L2-HL dyads (64.1% versus 47.9%). A chi-square test confirmed that this difference was not significant (χ^2=2.28, p=.13). versus 60.6% of reactive FFEs) and in L2-HL dyads (of preemptive FFEs versus 40% of reactive FFEs). As for reactive FFEs, learners in L2-L2 dyads incorporated information in the delayed posttest considerably more often than learners in L2-HL dyads (60.6% versus 40%). However, a chi-square test indicated that this difference was not statistically significant, though it approached significance (χ^2=3.38, p=.07). In other words, type of FFE did not have a differential effect on knowledge retention over a two-week period of time, regardless of dyad type.

4.3.3 Learning gains by linguistic focus of FFE

4.3.3.1 Immediate post-treatment task

To determine whether the frequency of subsequent use of linguistic information varied according to the linguistic focus of the FFEs, successfully resolved FFEs were tallied for each dyad type based on their linguistic focus (morphosyntactic, lexical, or orthographic) and whether

or not they had been successfully incorporated in the immediate post-treatment task. Cases in

which learners had not attempted to use the target items (NA) were not included in the analyses.

Three separate 2x2 contingency tables were created with the tallied totals: one for

morphosyntactic FFEs (Table 4.17), one for lexical FFEs (Table 4.18), and one for orthographic

FFEs (Table 4.19).

Table 4.17
2x2 Contingency table: Incorporation of information from morphosyntactic FFEs in the
immediate posttest by dyad type

			Incorporation		
			INC	NI	Total
Dyad type	L2-L2	Count	31	10	41
		Row %	75.6%	24.4%	100%
	L2-HL	Count	38	11	49
		Row %	77.6%	22.4%	100%
	Total		69	21	90

Table 4.18
2x2 Contingency table: Incorporation of information from lexical FFEs in the immediate
posttest by dyad type

			Incorporation		
			INC	NI	Total
Dyad type	L2-L2	Count	32	8	40
		Row %	80%	20%	100%
	L2-HL	Count	28	14	42
		Row %	66.7%	33.3%	100%
	Total		60	22	82

Table 4.19

2x2 Contingency table: Incorporation of information from orthographic FFEs in the immediate posttest by dyad type

			Incorporation		
			INC	NI	Total
Dyad type	L2-L2	Count	19	0	19
		Row %	100%	0%	100%
	L2-HL	Count	22	19	41
		Row %	53.7%	46.3%	100%
		Total	41	19	60

The frequencies showed similar rates of incorporation of information from morphosyntactic FFEs in the immediate posttest by learners in L2-L2 and L2-HL dyads (75.6% and 77.6%, respectively). A chi-square test confirmed that there were no significant differences between groups (χ^2=.04, p=.83). With respect to lexical FFEs, successful use of target items in the immediate post-treatment task was more frequent by learners in L2-L2 dyads (80%) than learners in L2-HL dyads (66.7%). The results from a chi-square test indicated that this difference was not statistically significant either (χ^2=1.86, p=.17). However, there was a clear difference between the two types of dyads in terms of incorporation of information from orthographic FFEs. Learners in L2-L2 dyads incorporated orthography-related information in the immediate posttest 100% of the time, whereas learners in L2-HL dyads only did so about half of the time. Since one of the assumptions of the chi-square test was not met (one cell had an observed frequency of less than 5), a Fisher's exact test was conducted instead. Results showed that L2-L2 dyads differed significantly from L2-HL dyads in terms of incorporating linguistic information from orthographic FFEs in the immediate posttest (*p*=0.0002), and the effect size was large (Cramer's V=-.46).

4.3.3.2 Delayed post-treatment task

The same procedure was followed to determine whether matched and mixed dyads differed in terms of incorporating information from FFEs of different linguistic focus in the two-week delayed post-treatment task. First, three 2x2 contingency tables were generated with the tallies of successfully resolved FFEs by dyad type and subsequent incorporation (INC, NI)[15]: one for morphosyntactic FFEs (Table 4.20), one for lexical FFEs (Table 4.21), and one for orthographic FFEs (Table 4.22).

Table 4.20
2x2 Contingency table: Incorporation of information from morphosyntactic FFEs in the delayed posttest by dyad type

			Incorporation		
			INC	NI	Total
Dyad type	L2-L2	Count	15	8	23
		Row %	65.2%	34.8%	100%
	L2-HL	Count	21	18	39
		Row %	53.8%	46.2%	100%
		Total	36	26	62

Table 4.21
2x2 Contingency table: Incorporation of information from lexical FFEs in the delayed posttest by dyad type

			Incorporation		
			INC	NI	Total
Dyad type	L2-L2	Count	20	15	35
		Row %	57.1%	42.9%	100%
	L2-HL	Count	12	21	33
		Row %	36.4%	63.6%	100%
		Total	36	26	62

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[15] Again, NA cases were not included in the analyses.

Table 4.22

2x2 Contingency table: Incorporation of information from orthographic FFEs in the delayed posttest by dyad type

			Incorporation		
			INC	NI	Total
Dyad type	L2-L2	Count	10	4	14
		Row %	71.4%	28.6%	100%
	L2-HL	Count	10	16	26
		Row %	38.5%	61.5%	100%
	Total		20	20	40

As the frequencies in all three tables show, the rate of incorporation of information in the delayed posttest was lower than in the immediate posttest. Nonetheless, learners in L2-L2 and L2-HL dyads incorporated morphosyntactic information with similar frequency (65.2% and 53.8%, respectively). A chi-square test showed that this difference was not significant (χ^2=.77, p=.38). In terms of lexical FFEs, L2-L2 learners successfully used target items 57.1% of the time, and learners in L2-HL dyads did so only 36.4% of the time. The results from a chi-square test indicated that this difference was not significant at the .05 level, though it approached significance (χ^2=2.94, p=.09). Lastly, with respect to orthographic FFEs, learners in L2-L2 dyads successfully incorporated information in the delayed posttest 71.4% of the time, whereas learners in L2-HL dyads did so just 38.5% of the time. Once again, since one of the assumptions of the chi-squared test was not met (one cell contained an observed frequency of less than 5), a Fisher's exact test was run to determine whether the rate of incorporation of orthography-related information differed significantly between dyad types. Results showed that this difference was not statistically significant (*p*=.10). In other words, there were no significant differences between dyad types in terms of the rate of incorporation of information from morphosyntactic, lexical, or orthographic FFEs in the delayed post-treatment task.

4.4 Research question 4: Learning gains from interaction within L2-HL dyads

The fourth research question asked: Do HL learners and L2 learners in L2-HL dyads differ in terms of learning gains as a result of the interaction? Specifically, does one learner (L2 or HL) use linguistic information provided by their partner in subsequent individual writing tasks more often than the other? This question was addressed by examining further the rate of incorporation of information from FFEs that were successfully resolved in L2-HL dyads in the immediate and in the delayed post-treatment tasks.

4.4.1 Immediate post-treatment task

The FFEs that were resolved in a more targetlike way in L2-HL dyads and that had been attempted (i.e., INC or NI) in the immediate posttest (n=132) were tallied according to which learner was the supplier of the information and whether his/her partner had incorporated the information successfully or not. A 2x2 contingency table was created with the tallied totals (Table 4.23).

Table 4.23
2x2 Contingency table: Incorporation of successfully resolved FFEs in the immediate posttest by supplier

			Incorporation		
			INC	NI	Total
Supplier	L2	Count	26	21	47
		Row %	55.3%	44.7%	100%
	HL	Count	62	23	85
		Row %	72.9%	27.1%	100%
		Total	88	44	132

The frequencies demonstrate that information supplied by the HL learners was successfully used in the immediate posttest by their L2 counterparts 72.9% of the time, whereas information provided by the L2 learners was incorporated by the HL learners only 55.3% of the time. A chi-square test was conducted to determine whether this difference was significant. Results showed that L2 learners indeed incorporated information provided by the HL learners significantly more often than the other way around (χ^2=4.23, p=.04, Cramer's V=.18). Figure 4.4 below illustrates this difference between the two types of learners.

Figure 4.4
Proportion of incorporated (INC) and not incorporated (NI) information from FFEs by supplier
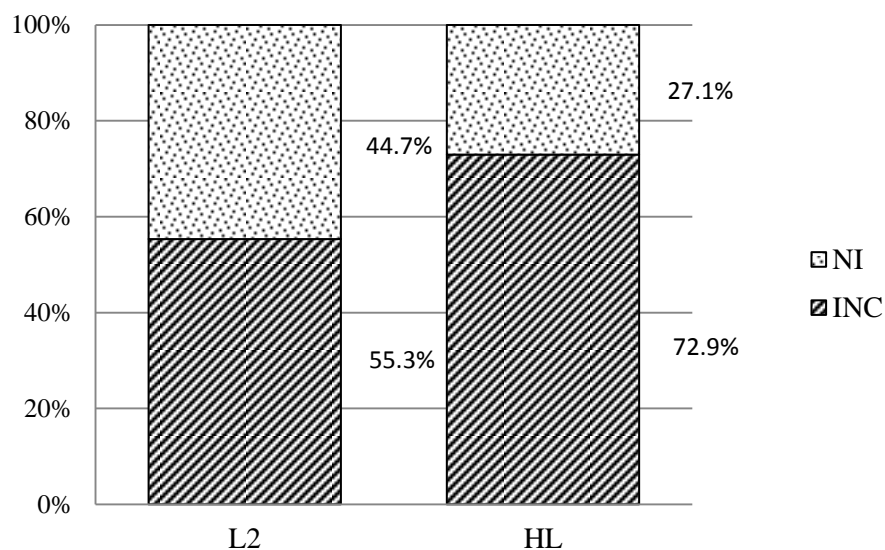
In light of this significant difference, the 21 instances in which HL learners failed to incorporate targetlike information provided by their L2 partners were examined further. It was found, perhaps not surprisingly, that the vast majority of those revolved around issues of orthography (n=17, 81%). On the other hand, the 23 instances in which L2 learners failed to use targetlike information supplied by HL learners were mostly lexical in nature (n= 13, 57%).

4.4.2 Delayed post-treatment task

The same procedure described in the previous section was used to determine whether one learner (L2 or HL) used linguistic information provided by their partner in the delayed post-treatment individual writing task more often than the other. Thus, correctly-resolved FFEs that had been attempted in the delayed posttest (n=98) were tallied according to the supplier of the information and whether his/her partner had incorporated the information successfully or not. The tallied totals were used to generate a 2x2 contingency table (Table 4.24).

Table 4.24
2x2 Contingency table: Incorporation of successfully resolved FFEs in the delayed posttest by supplier

			Incorporation		
			INC	NI	Total
Supplier	L2	Count	12	22	34
		Row %	35%	65%	100%
	HL	Count	31	33	64
		Row %	48%	52%	100%
		Total	43	55	98

Once again, overall rate of successful incorporation in the delayed posttest was lower than in the immediate posttest. The frequencies showed that targetlike information provided by the L2 learners was incorporated by their HL counterparts only 35% of the time, and information supplied by the HL learners was used correctly in the delayed posttest by their L2 partners 48% of the time. Results of a chi-square test revealed no significant differences between the rate of incorporation by L2 learners and HL learners (χ^2=1.56, *p*=.21). In other words, both types of learners incorporated information provided by their partners equally as often in the delayed posttest.

4.5 Summary of results

The first research question was partially answered in the affirmative: L2-L2 and L2-HL dyads differed in certain aspects of their orientation to form during interaction, but there were also some similarities between the two types of dyads. On the one hand, there were no differences between matched and mixed dyads in terms of the total number of FFEs, the frequency of preemptive and reactive FFEs, and the occurrence of morphosyntactic FFEs. On the other hand, L2-L2 and L2-HL dyads differed with respect to the frequency of orthographic and lexical FFEs: lexical FFEs were significantly more frequent in matched dyads than in mixed dyads, and orthographic FFEs occurred significantly more often in mixed dyads than in matched dyads. Moreover, L2-L2 and L2-HL dyads differed with respect to the outcome of FFEs. Not only was there a greater proportion of unresolved FFEs in matched dyads than in mixed dyads, but also L2-HL dyads resolved FFEs in more targetlike way significantly more often than L2-L2 dyads.

The second research question was partially answered affirmatively as well. There were several differences between L2 and HL learners in mixed dyads with respect to their focus on form, but the two types of learners were not completely different. In terms of initiation of FFEs, L2 learners initiated FFEs significantly more often than HL learners. Moreover, L2 learners and HL learners differed significantly with respect to the type of FFE they most often initiated: L2 learners initiated preemptive FFEs significantly more often than reactive FFEs, whereas HL learners initiated reactive FFEs significantly more often than preemptive FFEs. Together, these findings suggest that L2 learners requested assistance from their HL partners more often than the other way around. HL learners, on the other hand, appeared to provide assistance, solicited or not, to their L2 partners more frequently than the reverse. In fact, HL learners resolved FFEs

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significantly more often than L2 learners. Nevertheless, both types of learners were able to supply more targetlike resolutions to the FFEs equally as often. In other words, even though HL learners were most often the suppliers, they did not necessarily supply targetlike resolutions more often than the L2 learners. Further analyses of the linguistic focus of the targetlike resolutions revealed that while L2 and HL learners successfully resolved morphosyntactic FFEs equally as often, HL learners provided targetlike resolutions to lexical FFEs significantly more often than their L2 counterparts, and L2 learners correctly resolved orthographic FFEs significantly more frequently than the HL learners.

The third research question was, for the most part, answered affirmatively: learners in L2-L2 dyads incorporated information from the FFEs in both the immediate and the delayed post-treatment individual writing tasks significantly more often than learners in L2-HL dyads. However, there were no significant differences according to type of FFE: information from preemptive and reactive FFEs was equally likely to be incorporated in the immediate and the delayed post-treatment tasks learners by learners in either L2-L2 or L2-HL dyads. Moreover, learners in both types of dyads showed statistically similar rates of incorporation of information from morphosyntactic and lexical FFEs in the immediate and delayed post-treatment tasks. Matched and mixed dyads differed, though, in terms of the rate of incorporation of orthography-related information, especially in the immediate post-treatment task, where learners in L2-L2 dyads had a 100% retention rate, and learners in L2-HL dyads had a 53.7% retention rate.

The fourth research question was answered affirmatively for the immediate posttest but not for the delayed posttest. In the immediate post-treatment task, L2 learners incorporated information supplied by the HL learners significantly more often than the other way around. Results also revealed that the majority of cases in which HL learners failed to use information

provided by their L2 partners revolved around issues of orthography. However, in delayed post-treatment task, there were no differences between L2 and HL learners, as both incorporated information provided by their partners equally as often.

The next chapter discusses the results presented here, particularly in relation to previous research on interaction in SLA. Furthermore, pedagogical and theoretical implications of this study's findings are also discussed. Lastly, directions for future research are proposed in light of the limitations of the current study.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.0 Introduction

This study contributes to the field of SLA by providing an empirical answer to the general question of whether interaction, particularly learner-learner interaction, facilitates language learning. Specifically, the findings of this study shed light on not only the learning opportunities that arise when learners interact with each other, but also the outcomes of those opportunities in terms of knowledge retention. This chapter begins with a discussion of the results from the first and second research questions, which revolved around learners' orientation to form during task-based interaction. The following section discusses the findings from the third and fourth research questions, which focused on the extent to which episodes of learner-generated attention to form result in language learning. Then, the discussion turns to the implications of the current study in terms of the output hypothesis and the interaction hypothesis, as well as its implications for foreign language pedagogy. Then, the last section considers the limitations of the current study, and directions for future research in this area are proposed.

5.1 Learning opportunities during interaction

5.1.1 L2-L2 versus L2-HL dyads

To answer the first research question, matched and mixed dyads were compared with respect to the amount of incidental focus on form, as well as the characteristics of the FFEs that arose during the collaborative writing task. This section discusses how the two types of dyads compared in terms of the number, the type, the outcome, and the linguistic focus of the FFEs.

5.1.1.1 Number of FFEs

As predicted, there were no differences between matched and mixed dyads in the number of FFEs. This finding is in line with the fact that the mean number of LREs reported in L2-L2

learner interaction research (Leeser, 2004; Kim & McDonough, 2008; Swain & Lapkin, 2001) has typically been comparable to that in L2-HL learner interaction studies (Blake & Zyzik, 2003; Bowles, in press). Nonetheless, the mean number of FFEs across matched and mixed dyads in the current study was considerably higher than that reported in previous studies. For instance, across L2-L2 dyads, the mean number of FFEs in this study was 22.75, whereas in Leeser's (2004) study, it was approximately 6, and in Kim and McDonough's (2008) study the mean number of LREs in intermediate dyads was 13.5. With respect to the mean number of FFEs in L2-HL dyads, it was 24.5 in the current study, whereas in Bowles's (2011a) and in Blake and Zyzik's (2003) studies it was 5.16 and 2.7, respectively. Moreover, the mean number of FFEs in just one written task in this study was comparable to the mean number of LREs in Bowles' (2011a) study in three tasks (*M*=22.4). It would seem, then, that the overall amount of incidental focus on form is not affected by the linguistic background of the interlocutors as much as by task characteristics. The task in the present study not only asked learners to write, which has been shown to promote greater focus on form than tasks without such a written product (Adams, 2006; Bowles, 2011), but it also asked them explicitly to focus on form when revising their drafts[16], which none of the other studies did. Therefore, the larger number of FFEs in this study can likely be attributed to the written nature of the task and to the instructions themselves.

5.1.1.2 Type of FFEs

Also as predicted, L2-L2 and L2-HL dyads did not differ in terms of the frequency of preemptive and reactive FFEs. Both types of FFEs occurred equally as often in the two types of dyads. This finding suggests that when learners interact with other learners, they are as likely to

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[16] The study presented in this dissertation did not compare the amount of focus on form at different stages of the writing process. Future studies should investigate to what extent focus on form arose incidentally as learners were writing versus after being prompted to do so as they revised their drafts.

request assistance from each other as they are to provide each other with corrective feedback. Similar results were reported in classroom studies, such as Zhao and Bitchener (2007) and Williams (2001). In Zhao and Bitchener's (2007) study, preemptive FFEs occurred 41% of the time in learner-learner interaction, and reactive FFEs occurred 59% of the time. In the present study, there were slightly more preemptive FFEs (55.5% in L2-L2, 52% in L2-HL) than reactive FFEs (44.5% in L2-L2, 48% in L2-HL), but the proportions are comparable in the two studies. Previous research on teacher-learner interaction has also reported that preemptive FFEs occurred equally as often as reactive FFEs (Ellis et al., 2001a). However, the characteristics of the interlocutors appear to influence the type of FFEs they initiate: reactive FFEs are almost exclusively teacher-initiated, whereas preemptive FFEs are mostly initiated by learners (Ellis et al., 2001a; Loewen, 2005). The relationship between type of FFE initiated (preemptive, reactive) and learner linguistic background (L2, HL) in this study is explored in detail in section 5.1.2.2 below.

5.1.1.3 Linguistic focus of FFEs

Overall, learners in matched and mixed dyads focused their attention on a wide range of linguistic features. In fact, learners in L2-L2 and L2-HL dyads engaged in morphosyntactic FFEs as often as lexical FFEs. On the one hand, this result stands in contrast with a number of studies on learner-learner interaction that claimed that learner-generated attention to form is largely limited to lexical issues (Fuji & Mackey, 2009; Williams, 1999; Zhao & Bitchener, 2007). On the other hand, this finding is in line with several other studies on learner-learner interaction that reported high proportions of both lexical and grammatical LREs (Adams, 2007; Leeser, 2004; Ross-Feldman, 2007; Swain & Lapkin, 2001). As noted in chapter 2, this difference in results is likely attributed to the nature of the tasks employed in the studies, especially in terms of task

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modality. Research on task-based interaction has suggested that purely oral tasks may not be as effective as writing tasks in promoting focus on form (Adams, 2006; Adams & Ross-Feldman, 2008; Ross-Feldman, 2007; Williams, 2008). In fact, Ross-Feldman (2007) found that the written production task "was the only task that successfully turned learners' attention to matters of morphosyntax", whereas the oral production tasks only prompted lexical LREs (p. 74). Similar findings have been reported in L2-HL interaction as well (Bowles, 2011).

One explanation for the advantage of written tasks over oral tasks in promoting focus on form lies in the fact that the processing demands of speaking are greater than those of writing. The separation in time between the written form and the learners' intended meaning allows learners to attend to both form and meaning, which has been shown to be difficult for learners to do in oral tasks (cf. VanPatten, 1990). As Williams (1999) points out, learners might view written production as a form-oriented task, in which the language is an object to be studied, whereas oral production might be perceived as a meaning-oriented task, in which the language is purely a communication tool. Even though it is possible that learners may generally favor meaning over form in any kind of task, a written production task grants learners the opportunity to attend to form once the meaning has been conveyed on paper.

Even though lexical, morphosyntactic, and orthographic FFEs occurred in both matched and mixed dyads, there were significant differences between the two types of dyads with respect to the frequency of FFEs of different linguistic focus, contrary to what was hypothesized in chapter 2. Results showed that whereas morphosyntactic FFEs were equally frequent in both types of dyads, lexical FFEs occurred more often in L2-L2 dyads than in L2-HL dyads, and orthographic FFEs were more frequent in L2-HL dyads than in L2-L2 dyads. The lack of differences between dyad types in the frequency of morphosyntactic FFEs may be due to the fact

that HL and L2 learners of Spanish share some of the same gaps in their knowledge of

morphosyntax. Considering that both HL and L2 learners have difficulties with aspect and mood

distinctions (Lynch, 2008; Montrul & Perpiñán, 2011), gender agreement (Montrul, et al., 2008),

and case marking (Lynch, 2008; Montrul & Bowles, 2009), it is not surprising that matched and

mixed dyads had a similar proportion of morphosyntactic FFEs. In this respect, the linguistic

background of the learners does not appear to make a difference. For instance, examples 9 and

10 below illustrate FFEs of similar morphosyntactic focus in an L2-L2 dyad and in an L2-HL

dyad, respectively.

Example 9:

(L2)S81   Eh…is the boy angry at the tortoise or the dog here?

(L2)S145   the tortoise

(L2)S81   so, *el niño estaba enojada*
               So, the boy was angry-FEM

(L2)S145   *enojado*
               Angry-MASC

(L2)S81   *sí… con la tortuga…*
               Yes... with the turtle...

Example 10:

(HL)S103   *Se dio cuenta que la tortuga no estaba muerto*
               He realized the turtle-FEM was not dead-MASC

(L2)S177   *muerta*
               Dead-FEM

(HL)S103   *sí*
               yes

In example 9, one of the L2 learners (S145) initiates a reactive FFE triggered by a gender

agreement error on the part of her partner (S81). Likewise, in example 10, the L2 learner (S177)

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corrects his HL partner (S103) when she makes a gender-agreement error. These two examples help to show the overlap between L2 and HL learners in terms of the gaps in their grammars, which would help to explain the lack of differences between matched and mixed dyads in the proportion of morphosyntactic FFEs.

On the other hand, differences in the occurrence of lexical and orthographic FFEs may be explained by the L2 and HL learners' distinct language learning experiences. The greater proportion of lexical FFEs in L2-L2 dyads as opposed to L2-HL dyads may be due to that fact that HL learners exhibit a wider lexical repertoire than L2 learners, especially when it comes to early-acquired words that are frequent in colloquial registers, by virtue of having been exposed to abundant input in the target language at home since birth (Montrul & Foote, 2012). Instructed L2 learners, in contrast, receive contextually restricted input that typically does not include words acquired in early childhood. In the current study, the task favored the use of words that are more likely to appear in children's books rather than a foreign language textbook for adult learners. Thus, HL learners might have had an advantage over L2 learners in terms of being able to provide the majority of lexical items needed to write the story. In other words, learners in L2-L2 dyads noticed a greater number of holes in their lexical knowledge than learners L2-HL dyads, who relied on the HL learners' lexical knowledge to complete the task without the need to engage in FFEs. For instance, example 11 below shows an interactional exchange between an HL learner (S164) and his L2 partner (S98) as they were trying to express "to bury" in Spanish.

Example 11:

(HL)S164   *cuando estaba…* we can just put *enterrando… no sé… haciendo un hoyo,* making a hole
when   he was... we can just put burying... I don't know... making a hole, making a hole

(L2)S98   ok. Sounds good to me!

(HL)S164   [laughs]

In example 11, the HL learner provides the target item and a translation of it to his partner, who readily agrees with the HL learner's suggestion without engaging in negotiation. By contrast, example 12 below shows two L2 learners working through the same lexical issue.

Example 12:

(L2)S169   *¿cómo se dice… "*they grabbed"?
How do you say... "they grabbed"?

(L2)S126   oh, yeah…

(L2)S169   *¿tomar?*
To take?

(L2)S126   they buried it?

(L2)S169   *preparar…*
To prepare...

(L2)S126   *para… no sé cómo se dice* bury… *para…un sitio después de vida*
For... I don't know how to say bury... for... a place after life

In the case of the L2-L2 dyad in example 12, both learners noticed a hole in their lexical knowledge when they realized they did not know how to say "to bury" in Spanish, which promptly triggers an FFE in which they engaged in co-construction of knowledge and circumlocution to fill that hole.

Learner linguistic background may also explain the difference between L2-L2 and L2-HL dyads with respect to the frequency of orthographic FFEs. Bowles (2011a) reported a high proportion of LREs that focused on orthography (37%) in L2-HL interaction during a collaborative writing task, whereas studies on L2-L2 interaction during similar writing tasks reported little to no focus on orthography (Adams, 2006; Leeser, 2004; Ross-Feldman, 2007). Leeser (2004), for instance, reported that only 10% of LREs revolved around spelling issues. Instructed L2 learners tend to have a strong command of orthographic conventions, given that they receive extensive exposure to written language in the classroom; by contrast, the majority of HL learners struggle with spelling and accent placement by virtue of having acquired the language aurally and receiving little to no formal instruction in the minority language (Bowles, 2011; Colombi, 1997; Teschner, 1981). Example 13 below serves to illustrate this point: the HL learner (S137) seeks her L2 partner's assistance to resolve an orthographic FFE, and she openly expresses insecurity with respect to her spelling skills.

Example 13:

(HL)S137 *¿mordió tiene un acento?*
"bit" has an accent?

(L2)S50 *creo que sí*
I think so

(HL)S137 *¿en la 'i' o la 'o'? porque no soy bueno, buena*
On the i or the o? Because I'm not good-MASC, good-FEM

(L2)S50 *en la 'o'*
On the o

5.1.1.4 Outcome of FFEs

Overall, learners in both types of dyads were able to resolve the majority of FFEs, and the resolutions they reached were usually in the direction of the target. These findings echo what

previous research on L2-L2 and L2-HL interaction has reported (Adams, 2007; Bowles, 2011a, in press; LaPierre, 1994; Leeser, 2004; Kim & McDonough, 2008). Nonetheless, there were significant differences between L2-L2 and L2-HL dyads with respect to the outcome of FFEs. Matched dyads were not able to resolve FFEs as often as mixed dyads. Moreover, matched dyads reached less targetlike resolutions more often than mixed dyads. Viewed from the opposite perspective, L2-HL dyads resolved FFEs in more targetlike way significantly more often than L2-L2 dyads.

The differential effect of dyad type on the outcome of FFEs is likely attributed to differences in the proficiency level of learners in each type of dyad. As noted in chapter 3, the HL learners' scores on the MLA/DELE proficiency test were significantly higher than the L2 learners' scores. The mean score for the HL learners was in the "advanced" range, whereas the mean score for the L2 learners fell in the "intermediate" range. It is not surprising then, that dyads that included an advanced interlocutor were able to successfully resolve FFEs more frequently than dyads that were formed only by intermediate-level learners. Similar findings as to the effects of interlocutor proficiency have been reported in other studies with only L2-L2 dyads. Both Leeser (2004) and Kim and McDonough (2008) reported that dyads in which one learner was more advanced than his or her partner found correct solutions to their linguistic queries significantly more often than dyads in which both learners were of low or intermediate proficiency. While it would appear that L2-HL dyads had an advantage over L2-L2 dyads in terms of their ability to correctly resolve FFEs, it is important to consider knowledge retention rates before drawing any conclusions as to which dyad type benefitted more from the interaction. Learning gains by dyad type are discussed in section 5.2.1 below.

To answer the second research question, L2 learners and HL learners within mixed dyads were compared with respect to initiation and resolution of preemptive and reactive FFEs of different linguistic focus. This section discusses how the two types of learners compared in terms of the frequency of initiation of FFEs, the type of FFEs initiated, the resolution of FFEs, and the linguistic focus of resolved FFEs.

5.1.2.1 Frequency of initiation of FFEs

It was hypothesized that L2 and HL learners would initiate FFEs equally as often, based on previous studies on L2-HL interaction (Bowles, 2011a, in press). However, this hypothesis was not confirmed, as L2 learners initiated FFEs significantly more often than HL learners. The results suggest that HL learners did not attend to form as frequently as the L2 learners. It is possible that L2 learners were more likely to initiate FFEs because they felt less secure about their language skills than the HL learners. This possibility is underscored by the fact that, in addition to scoring significantly lower on the proficiency test, the L2 learners' self-ratings in Spanish (M=3) on the language background questionnaire were lower than the HL learners' self-ratings (M=4.5).

Furthermore, differences between HL and L2 learners' mode of acquisition may also help to explain why the L2 learners in this study focused more on form than the HL learners. As was pointed out in chapter 2, instructed L2 learners acquired the target language through explicit instruction as well as feedback on form, and thus they are accustomed to questioning the accuracy of their output and relying on explicit knowledge. HL learners, on the other hand, acquired the language in a naturalistic setting, without conscious attention to form, and thus they are more used to relying on their implicit knowledge and producing the target language without

consciously reflecting on it. In fact, emerging psycholinguistic research has indicated that L2 learners tend to outperform HL learners on tasks that require them to draw on their explicit knowledge, while the opposite is true for tasks that tap the learners' implicit knowledge of the language (Bowles, 2011b; Montrul & Perpiñán, 2011; Montrul, et al., 2008).

As for the difference between the results of the current study and previous research (Bowles 2011a, in press), a possible explanation may lie in that fact that the participants in this study differed significantly in their proficiency levels, whereas Bowles (2011a) reported that L2 and HL learners scored within 5 points of each other on the MLA/DELE test. With respect to Bowles (in press), even though proficiency was not documented, the possibility that learners in that study may have been more closely matched for proficiency than learners in this dissertation cannot be discarded.

5.1.2.2 Type of FFEs initiated

Given that previous research on L2-HL interaction did not compare the occurrence of preemptive and reactive FFEs, a null hypothesis was adopted regarding differences in initiation of FFEs according to type. Once again, this hypothesis was rejected, as L2 learners and the HL learners differed significantly with respect to the type of FFEs they initiated. L2 learners initiated preemptive FFEs significantly more often than reactive FFEs, suggesting that they were more likely to request assistance from the HL learners than to correct or question their partners' production. The exact opposite pattern emerged for the HL learners: they initiated reactive FFEs significantly more often than preemptive FFEs, indicating that were more likely to provide corrective feedback in reaction to the L2 learners' errors than the other way around. Example 14 below illustrates a preemptive FFE initiated by an L2 learner, and example 15 shows a reactive FFE initiated by an HL learner.

Example 14:

(L2)S50   *el perro puso su…* tail? *en el río*
            The dog put his... tail? in the river

(HL)S137   *¿cola? Creo que así se dice, es cola,* well*, es como yo lo digo*
            Tail? I think that's how you say it, tail, well, that's how I say it

(L2)S50   *¿su qué?*
            His what?

(HL)S137   *su cola*
            His tail

(L2)S50   *su cola*
            His tail

Example 15:

(L2)S220   *todos salieron y el perro estaba muy triste*
            Everyone went out and the dog was sad

(HL)S94   mm… or *se estaban yendo… salieron* means like, to get out of
            mm... or they were leaving... they went out means, like, to get out

(L2)S220   oh, ok

(HL)S94   *yendo* is like, just leaving

(L2)S220   oh, ok

In example 14, the L2 member of the dyad (S50) seeks help from the HL learner (S137)
to resolve a lexical FFE, which is indeed successfully resolved. In example 15, the HL learner
(S94) initiates a reactive FFE, as she provides a correction to the word choice error made by her
L2 partner.

The most likely explanation for the fact that L2 learners and the HL learners differed with
respect to the type of FFEs they initiated lies in the differences in proficiency levels between
learners. It seems natural for lower proficiency learners (i.e., the L2 learners) to seek assistance

from more advanced learners (i.e., the HL learners). By the same token, advanced learners are more likely to notice gaps in the lower level learners' knowledge and correct them more often than the reverse. This does not mean that L2 learners were unable to notice any gaps in the HL learners' knowledge, nor that HL learners did not seek assistance from their L2 counterparts. In fact, L2 learners corrected the HL learners 38% of the time, and HL learners requested assistance from the L2 learners almost 36% of the time. In other words, even though L2 learners were more often the ones requesting assistance, and HL learners were usually the ones providing assistance, benefits were not entirely one-sided in favor of L2 learners, as discussed in the following two sections.

5.1.2.3 Resolution of FFEs

Contrary to what was hypothesized, there were significant differences between HL learners and L2 learners in terms of the overall rate of resolution of FFEs. Results showed that HL learners resolved FFEs significantly more often than L2 learners. Considering that L2 learners initiated a greater proportion of FFEs, and especially preemptive FFEs, it is not surprising that HL learners were the suppliers of information more often that the L2 learners. Furthermore, the HL learners were more confident in their linguistic abilities in Spanish than the L2 learners, as evidenced by their self-ratings on the language background questionnaire. Thus, they were likely perceived as being the experts and, as such, made the majority of the linguistic decisions within the dyads. To some extent, this would be in line with what Blake and Zyzik (2003) and Bowles (2011a) observed regarding the L2 and HL learners' attitudes towards working together in that the L2 learners clearly respected the expertise of the HL learners.

Nevertheless, in terms of providing more targetlike resolutions to the FFEs, there was no difference between learners. L2 and HL learners resolved a similar proportion of FFEs in a

targetlike way: almost 92% of FFEs resolved by L2 learners and 86% of the FFEs resolved by

HL learners had a more targetlike resolution. In other words, even though HL learners resolved a

greater proportion of FFEs overall, both types of learners were able to provide targetlike

information to their partners whenever they were the suppliers. This finding is somewhat

unexpected given that HL learners were significantly more proficient than the L2 learners.

However, the lack of differences could be due to the L2 learners being selective in the FFEs they

resolved. In other words, they likely supplied a resolution only when they felt certain they knew

the correct answer. For instance, in example 16, the L2 learner (S110) supplies the resolution to a

morphosyntactic FFE initiated by the HL learner (S196), who is uncertain of whether imperfect

or preterite should be used in that context. The L2 learner hesitates at first ('*estuvo, ¿no?*'), but

almost immediately she rejects her initial hypothesis ('oh! No, no!') and confidently provides the

correct form ('¡*Estaba*!').

Example 16:

(HL)S196   *estaba, estuvo pescando… or estaba pescando?*
                Was-IMP, was-PRET fishing... or was-IMP fishing?

(L2)S110   *estuvo, ¿no? oh, no, no! ¡Estaba!*
                was-PRET, right? Oh, no, no! Was-IMP!

(HL)S196   *estaba*
                Was-IMP

(L2)S110   *estaba pescando*
                was-IMP fishing

On the other hand, it is possible that whenever the L2 learners did not know or were

unsure of the answer, they either did not engage in FFEs or preemptively sought help from the

HL learners, as in example 17.

Example 17:

(L2)S110   *Un día… un chico que se llamaba …llamaba or llamó?*
            One day... a boy that was-IMP called... was-IMP called or was-PRET
            called?

(HL)S196   *se llamaba*
            was-IMP called

(L2)S110   *se llamaba Panchito*
            was-IMP called Panchito

Nonetheless, the lack of differences between learners in terms of successfully resolving

FFEs does not mean that L2 and HL learners were equal in their linguistic expertise. In fact, as

the next section explains, learners differed in the linguistic focus of FFEs they most often

resolved.

5.1.2.4 Linguistic focus of correctly-resolved FFEs

As predicted, L2 and HL learners differed with regards to resolution of lexical and

orthographic FFEs, but they did not differ in terms of how often they correctly resolved

morsphosyntactic FFEs. This finding may be explained by the fact that there is a certain amount

of overlap in terms of the morphosyntactic gaps that L2 and HL learners exhibit (Lynch, 2008;

Montrul, 2011b; Montrul & Bowles, 2009; Montrul, et al., 2008; Montrul & Perpiñán, 2011).

Therefore, it is not surprising that both types of learners were able to resolve morphosyntactic

FFEs in a targetlike way with similar frequency. Whenever HL learners assisted or corrected the

L2 learners with matters of morphosyntax, the information provided was more targetlike 93% of

the time. Likewise, whenever L2 learners resolved morphosyntactic FFEs in response to HL

learners' errors or queries, the resolution was more targetlike 95% of the time. In fact, even

though L2 learners had lower proficiency test scores than the HL learners, there was only one

instance in which an L2 learner provided less targetlike morphosyntactic information to her HL partner, as illustrated in example 18.

Example 18:

(HL)S52   *y la tortuga trató de comer a Pepe*. Do you say "a"?
            And the turtle tried to eat DOM Pepe. Do you say "a"?

(L2)S183   I think it's *comer Pepe*
            I think it's eat Pepe

(HL)S52   *¿trató de comer Pepe*? OK
            Tried to eat Pepe? OK

In this FFE, the HL learner (S52) seeks help from his L2 partner (S183) to verify whether or not the dative case marker 'a' is necessary in the sentence "the turtle tried to eat Pepe". The L2 learner supplies an incorrect resolution when she indicates that the 'a' is not needed, and the HL learner subsequently accepts his partner's resolution. As previous research has shown, differential object marking is a morphosyntactic feature that is difficult for L2 and HL learners, which would explain why this particular morphosyntactic FFE resulted in an incorrect resolution agreed upon by both learners.

On the other hand, learner linguistic background did have a differential effect on the frequency of targetlike resolution of lexical and orthographic FFEs. While L2 learners provided targetlike resolutions to orthographic FFEs more often than HL learners, HL learners resolved lexical FFEs in a targetlike way more often than L2 learners. These differences between learners are most likely explained by task effects. As discussed above, the story that learners were asked to narrate was based on a children's picture story book, thus prompting the use of lexical items that are likely to be acquired in childhood. It makes sense, then, that the HL learners, who have a better command of early-acquired words (Montrul & Foote, 2012), successfully resolved lexical

FFEs more often than the L2 learners. At the same time, by including a writing component, the task also tapped into the expertise of the L2 learners, who were able to provide targetlike resolutions to orthographic FFEs significantly more often than the HL learners. In fact, out of the 30 orthographic FFEs resolved by L2 learners, only 2 (7%) had a less targetlike resolution, whereas HL learners supplied incorrect information regarding spelling and accent placement 11 out of 17 times (65%). These findings are in line with Bowles (2011a), who found that the direction of the benefits of L2-HL interaction are dependent upon the characteristics of the task: when the linguistic focus is on vocabulary, HL learners assist L2 learners more often than the other way around, but the opposite is true when the focus is on orthography.

5.2 Learning outcomes of interaction

The third and fourth research questions inquired about the extent to which FFEs resulted in language learning, as measured by the incorporation of linguistic information in subsequent drafts. Overall, learners internalized a considerable proportion of the information provided by their partners. Despite a decline over time, which is to be expected, retention rates were fairly high in both the immediate and delayed post-treatment writing tasks. Nonetheless, benefits from interaction differed in L2-L2 and L2-HL dyads. The following section discusses the differences between dyad types (matched, mixed) as well as between learner types (L2, HL) in terms of learning outcomes.

5.2.1 L2-L2 versus L2-HL dyads

Contrary to what was predicted, there was a significant difference between L2-L2 and L2-HL dyads: learners in matched dyads incorporated a greater proportion of information from FFEs than learners in mixed dyads in both the immediate and delayed post-treatment writing tasks. Retention rates by learners in L2-L2 dyads are similar to those found in previous research

(Adams, 2007; Bitchener, 2004); in contrast, the rate of incorporation of information by learners in mixed dyads, especially in the delayed post-treatment task, was much lower. These findings would suggest that matched dyads benefitted more from the interaction than mixed dyads. To better understand the nature of this difference, it is important to consider differences according to the linguistic focus of the FFEs as well as according to the supplier of information (L2, HL). These differences are explored in greater detail in the following sections.

5.2.1.1 Learning outcomes by FFE type

L2-L2 and L2-HL dyads differed in terms of incorporation of information from preemptive FFEs, but not reactive FFEs. In the immediate posttest, L2-L2 dyads incorporated information from preemptive FFEs significantly more often than L2-HL dyads. Considering that L2 learners initiated the majority of preemptive FFEs in L2-HL dyads, this finding suggests that the difference may lie in the information provided by a much more proficient interlocutor (i.e., an HL learner) as opposed to an interlocutor of similar proficiency (i.e., another L2 learner). It is possible that L2 learners tended to provide each other with information that was partially known, whereas HL learners responded to preemptive queries with forms that were completely new to their L2 partners. In fact, preemptive FFEs in L2-L2 dyads were at times resolved collaboratively, as in example 19, and other times learners would provide each other with acceptable alternatives rather than the exact target forms, as in example 20.

Example 19:

(L2)S21   Pedro

(L2)S127   *trató de... trató de...* to carry?
                Tried to... tried to... to carry?

(L2)S21   *¿es llevar* to carry?
                Is 'llevar' to carry?

(L2)S127   *creo que sí*
                I think so

(L2)S21   *sí*
                yes

Example 20:

(L2)S169   *¿cómo se dice*, like, a pond?
                How do you say, like, a pond?

(L2)S126   *en un lago*
                In a lake

(L2)S169   *sí*
                yeah

In example 19, S127 initiates a preemptive FFE when she seems unable to retrieve the verb "to carry" in Spanish. Her partner, S21, provides it but at the same time seeks S127's approval to confirm that "*llevar*" is indeed the correct word. Thus, even though S21 is the supplier, S127 is to an extent also involved in the resolution of the FFE, when she expresses her approval of the form provided by her partner. In example 20, S126 responds to his partner's lexical query by supplying a word that is not precisely the word that S169 is looking for, but it is close enough in meaning to fulfill the communicative goal of the task, and thus S169 accepts it as a valid option.

On the other hand, a number of preemptive FFEs in L2-HL dyads were different from those in L2-L2 dyads in that some resembled teacher-initiated preemptive FFEs, as in example

21, and others consisted of the L2 learners inquiring about the meaning of a new word produced

by their HL partners, as in example 22.

Example 21:

(HL)S53	*Juan iba a enterrar… ¿sabes qué es enterrar?* Juan was going to bury... do you know what 'enterrar' is?
(L2)S233	*¿qué?* What?
(HL)S53	*¿sabes qué es enterrar?* Like, to bury do you know what 'enterrar' is? Like, to bury
(L2)S233	ok, ok

Example 22:

(HL)S52	*cuando Pepe sent-, sintió* When Pepe fell- felt
(L2)S183	*sintió* felt
(HL)S52	*algo cogerlo… y* Something grab him... and
(L2)S183	*¿algo qué?* Something what?
(HL)S52	*coger* To grab
(L2)S183	what's that?
(HL)S52	to grab
(L2)S183	oh

In example 20, the HL learner draws her L2 partner's attention to the linguistic item by asking

her if she knows the meaning of it, in anticipation of her being unfamiliar with that word. When

the L2 learner indicates she does not know the word, the HL learner provides a translation for it.

Therefore, in this case, the HL learner initiates a preemptive FFE predicting a gap in the L2

learner's knowledge, as teachers oftentimes do (cf. Ellis et al, 2001b). In example 21, on the

other hand, the L2 learner initiates a preemptive FEE when he notices an unfamiliar word in the

HL learner's utterance. Even though the L2 learner is the one who draws attention to the

linguistic item, the FFE is not triggered by something the L2 learner wants to convey, as in

example 19 above, but rather by something that his partner said.

In other words, whereas preemptive FFEs in L2-L2 dyads consisted mostly of one learner

asking the other how to say something, preemptive FFEs in L2-HL dyads also included instances

in which the L2 learner asked the HL learner about the meaning of a word, as well as instances in

which the HL learner anticipated a gap in the L2 learner's knowledge. Some FFEs in L2-HL

dyads occurred because of an actual or anticipated breakdown in communication, whereas the

majority of preemptive FFEs in L2-L2 dyads arose "because the participants wanted to learn

about a form" (Ellis et al., 2001b, p. 428). It could be argued that self-initiated attention to form

triggered by communicative need may be more effective in promoting retention than preemptive

attention to form that is triggered by a communication breakdown. However, the goal of the

present study was not to empirically address this possibility. Future studies should explore the

nature of preemptive FFEs and their effectiveness in promoting retention in greater detail.

With respect to incorporation of information from reactive FFEs, there were no

statistically significant differences between L2-L2 and L2-HL dyads. The lack of differences

could be explained by the fact that both L2 and HL learners were equally explicit in their

provision of corrective feedback. In both types of dyads, learners provided each other with rather

explicit forms of feedback, such as direct corrections, metalinguistic explanations, prompts, and

partial recasts. For instance, example 23 illustrates a reactive FFE in a matched dyad, and

example 24 shows a similarly explicit reactive FFE in a mixed dyad. In both cases, the learners

who initiate the reactive FFEs provide their partners not only with the correct form but also with

a metalinguistic explanation. In the majority of instances, however, learners provided stand-alone

partial recasts, without any other signals or explanations, such as examples 9 and 10 presented

above.

Example 23:

(L2)S123   *Sam… encontré*
            Sam... I found

(L2)S44   *no, es encontró porque encontré es yo*
            No, it's he found because 'encontré' is 'I (found)'

(L2)S123   *sí*
            yes

Example 24:

(L2)S48   *de repente, Max realizó que la tortuga no estaba muerto*
            suddenly, Max realized that the turtle was not dead-MASC

(HL)S12   *muerta*
            dead-FEM

(L2)S48   *muerta*, ok
            dead-FEM, ok

(HL)S12   it's *la tortuga*, so it has to be *muerta*
            it's the turtle-FEM, so it has to be dead-FEM

The incorporation of information from preemptive and reactive FFEs was compared

within dyads to determine whether one type of FFE was more effective than the other in

promoting L2 learning. No significant differences were found, suggesting that both preemptive

and reactive FFEs were equally likely to lead to learning gains in L2-L2 and in L2-HL dyads.

The fact that learners provided each other with such explicit forms of corrective feedback would

presumably explain this lack of differences.

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5.2.1.2 Learning outcomes by linguistic focus of FFE

As predicted, there were no differences between L2-L2 and L2-HL dyads with respect to incorporation of morphosyntactic and lexical information in either the immediate or delayed post-treatment tasks. Given that there were no differences between dyads in the occurrence of morphosyntactic FFEs, it follows that there would be no differences in terms of learning gains. With respect to lexical FFEs, even though they occurred more frequently in L2-L2 dyads, a considerable proportion of them were left unresolved (33%) or resolved incorrectly (14%), and therefore they were excluded from the total number of FFEs that could lead to learning gains.

On the other hand, the results showed that there was a significant difference between dyads with respect to incorporation of information from orthographic FFEs in the immediate posttest. Learners in L2-L2 dyads incorporated orthography-related information more often than learners in L2-HL dyads. In fact, L2-L2 dyads never failed to incorporate orthographic information in the immediate posttest. This remarkably high rate of retention could be explained by the fact that L2 classroom instruction relies heavily on written input and output, and foreign language instructors tend to emphasize the importance of accent marks and proper spelling.

In contrast, L2-HL dyads failed to successfully incorporate orthographic information almost half of the time in the immediate posttest. Considering that L2 learners supplied targetlike resolutions to orthographic FFEs more frequently than HL learners, it is reasonable to conclude that the difference between dyads may be attributed to the HL learners failing to incorporate orthography-related information. Differences between L2 and HL learners within mixed dyads, particularly with respect to orthographic FFEs, are discussed in the next section.

<u>5.2.2 L2 learners versus HL learners in L2-HL dyads</u>

Contrary to what was predicted, there were significant differences between HL and L2

learners in L2-HL dyads in terms of learning gains as a result of the interaction. Specifically, L2

learners correctly used information provided by the HL learners significantly more often than the

other way around in the immediate post-treatment task. In the delayed post-treatment task, the

difference between L2 and HL learners dissipated, as the retention rates of both declined

considerably. The question that arises, then, is why the HL learners failed to incorporate a high

proportion of information provided by their L2 partners (44.7% in the immediate posttest; 65%

in the delayed posttest). One possible explanation pertains to a negative perception of peer

feedback. Some HL learners may be apprehensive about relying on their L2 counterparts'

knowledge. This may be especially true if their partners are perceived to have lower proficiency,

which was the case in this study. Thus, even though L2 learners were highly accurate in their

resolution of FFEs and provided targetlike information 92% of the time, the HL learners likely

questioned the accuracy of the information provided by their partners, given that they found

themselves helping the L2 learners more often than the other way around. On the other hand, L2

learners likely viewed their HL partners as reliable sources of linguistic information (cf. Blake &

Zyzik, 2003), given that they accepted the resolutions proposed by the HL learners even when

the information provided was inaccurate. There were a number of instances, such as the FFE in

example 25, in which the L2 learner questioned the accuracy of the HL learner's utterance, and

yet, the agreed upon resolution was ultimately made by the HL learner despite it being incorrect.

Example 25:

(HL)S103   *el niño y los animales vio a la tortuga*
The boy and the animals saw-3RD SG the turtle

(L2)S177   *¿vieron? ¿o vio?*
Saw-3RD PL? Or saw-3RD SG?

(HL)S103   *creo que es vio*
I think it's saw-3RD SG

(L2)S177   oh

(HL)S103   *yo puse vio*
I put saw-3RD SG

(L2)S177   *¿vio?*
saw-3RD SG?

(HL)S103   aha

In this FFE, the L2 learner (S177) notices a subject-agreement error in the HL learner's utterance

and initiates a reactive FFE drawing his partner's attention to the verb form. The HL learner

provides a less targetlike resolution, which the L2 learner questions one more time but ultimately

accepts. Instances in which the L2 trusted the knowledge of the HL learners were not limited to

lexical and morphological matters, but they also included issues related to orthography, an area

in which presumably the HL learners do not perceive themselves as experts.

Example 26:

(HL)S12   *algo había jalado la linia del niño*
             Something had pulled the line of the boy

(L2)S48   is *linea* L-I-N-I?
             is line L-I-N-I?

(HL)S12   *lin- linia*
             Lin-line

(L2)S48   with an 'i'?

(HL)S12   I think so, *linia*

In example 26 above, the L2 learner (S48) reacts to the incorrect spelling of a word on the HL learner's draft. After questioning twice the way in which the HL learner has spelled the word, the L2 learner finally accepts the HL learner's resolution and changes the spelling of the word '*línea*' on her draft to '*linia*'. In this respect, the results of this study would appear to stand in contrast with Bowles (2011a), who reported that "HL learners routinely asked their L2 partners for assistance with spelling and accent placement," which implies that HL learners trusted the expertise of L2 learners in that area. Learners in this study showed the exact opposite pattern: the majority of orthography-related FFEs were initiated by the L2 learners; in fact, out of the 31 preemptive orthographic FFEs, 22 (71%) were initiated by L2 learners. Considering that the participants in Bowles' (2011a) study were matched for proficiency, whereas the HL learners in the current study were significantly more proficient than their L2 partners, it is possible that the HL learners in this study had a different perception of their partner's ability to help, and thus felt less compelled to seek their assistance, even with matters of orthography.

Another possible explanation for the significantly lower rate of incorporation of information on the part of the HL learners may lie in the linguistic focus of the information

supplied by the L2 learners that was not used by the HL learners. A closer look at the instances

in which HL learners failed to incorporate information provided by their partners in the

immediate posttest revealed that 81% of them revolved around issues of orthography. More

specifically, the majority had to do with missing accent marks, and a few dealt with spelling

distinctions between ll/y and j/g. Therefore, it is important to explore possible reasons why HL

learners did not incorporate information from orthographic FFEs in particular. As Mikulski

(2006) reported, HL learners might perceive proper orthography, and accent placement in

particular, as being an important part of formal writing assignments (e.g., academic papers), but

somewhat optional in informal writing tasks (e.g., emails to friends and family members). It may

be argued that orthography has less communicative value than lexical or morphosyntactic aspects

of the language. Missing written accents rarely impede comprehension, and even when

diacritical marks make a difference in meaning, the context typically helps to avoid

misunderstandings. Since the task they were asked to do in this study consisted of writing a

children's story, it is possible they viewed it as an informal narration where communicating

meaning took precedence over accuracy with spelling and accent placement. L2 learners, on the

other hand, might perceive orthography as an equally important part of the target language

regardless of the register, by virtue of having acquired the language in a classroom setting, where

misspelled words tend to be deemed as incorrect in any written assignments (e.g., exams,

homework, compositions, etc.). Given that the majority of orthographic FFEs were initiated by

the L2 learners, it is clear that they paid closer attention to orthography than the HL learners did.

5.3 Implications

From a theoretical standpoint, the findings of this dissertation lend support to the output

hypothesis (Swain, 1995, 2005), as they establish an empirical link between collaborative

dialogue and language learning. Not only was it shown that, in the process of collaboratively producing language, learners noticed gaps, tested hypotheses and reflected upon the target language, but also it was demonstrated that the cognitive processes triggered by collaborative output promote learning, as indicated by the fact that learners successfully used a considerable proportion of the linguistic forms provided by their partners in subsequent individual production tasks.

Moreover, the results of this study point to the fact that collaborative dialogue is most beneficial when learners interact with an interlocutor of similar or higher proficiency. According to the interaction hypothesis, "negotiation for meaning, and especially negotiation work that triggers interactional adjustments by the Native Speaker or more competent interlocutor, facilitates acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways" (Long, 1996, pp. 451-2). This study's findings support the stipulation that negotiation work facilitates acquisition, but the present findings also imply that interacting with a more competent interlocutor is not necessarily more facilitative of negotiation, given that learners in L2-L2 dyads, who were of similar proficiency, engaged in a statistically similar number of FFEs as the learners in L2-HL dyads, who were not matched for proficiency.

On the one hand, collaborative dialogue in L2-HL dyads appeared to be more fruitful in that a correct resolution was reached significantly more often than in L2-L2 dyads. On the other hand, learning gains were significantly greater for learners in L2-L2 dyads, suggesting that learners may benefit more from interacting with a peer of similar proficiency. Considering that retention rates, especially in the delayed post-treatment task, were higher for L2 learners in matched dyads (64%) than for L2 learners in mixed dyads (48%), it would seem logical to

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propose that collaborative dialogue is optimal in promoting language learning when interlocutors

do not differ greatly in proficiency (cf. Watanabe & Swain, 2007). Nonetheless, given that

proficiency was not a variable manipulated in the present study[17], it is impossible to separate the

effects of linguistic background from those of proficiency. In other words, it cannot be

determined from the current data whether the advantage of L2-L2 dyads in terms of learning

gains is attributable to the fact that the learners were of similar proficiency or of similar linguistic

background. At the very least, the results suggest that matched dyads might be more conducive

to learning not only because learners might perceive each other as equal in terms of being

reliable sources of information, but also because learners of similar proficiency provide each

other with linguistic information that is readily learnable. As discussed above, L2-L2 dyads were

more prone to co-construct simplified solutions to their linguistic quandaries than L2-HL dyads,

where the more proficient interlocutor made the majority of linguistic decisions, some of which

may have been too "advanced" for the less proficient member of the dyad to internalize, echoing

the findings of Leeser (2004) and Watanabe and Swain (2007) for L2-L2 pairs with a large

proficiency difference. Further research testing learning gains of L2-HL pairs matched for

proficiency is needed before a firm conclusion can be reached regarding the role of proficiency

and of linguistic background in learner-learner interaction.

Furthermore, the present study offers an important contribution to interactionist SLA by

examining both the occurrence and learning outcomes of preemptive and reactive FFEs in NNS-

NNS interaction. Within-dyad comparisons revealed that there were no significant differences

between preemptive and reactive FFEs in terms of learning gains. This finding suggests that self-

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[17] As explained in Chapter 3, the difference in proficiency levels between L2 and HL learners
reflects the reality of the classroom, since all of the learners were enrolled in the same course and
would be working together, thus preserving the ecological validity of the study.

and other-initiated attention to form appears to be equally effective in promoting language learning. In theory, feedback provided in response to preemptive FFEs is always consciously noticed by the learner, whereas reactive corrective feedback might go unnoticed, as indicated by previous research on NS-NNS interaction (Lyster, 2004; Mackey, Gass, & McDonough, 2000). The results of both Lyster (2004) and Mackey et al. (2000) indicate that feedback in the form of recasts, and particularly when targeting morphosyntactic issues, tend to be perceived by learners as being semantic reformulations or mere conversational repetitions of their utterances. However, the results from this study suggest that regardless of whether feedback was requested or not, it seems to have been equally noticed by the learners. As previously discussed, the most likely explanation as to why preemptive and reactive FFEs were equally effective lies in the level of explicitness of the corrective feedback learners provided each other. Thus, a possible advantage of learner-initiated reactive FFEs over teacher-initiated reactive FFEs is that when learners correct each other, the feedback provided is more explicit, yet less face-threatening than when their instructor corrects them.

Whereas reactive FFEs in NS-NNS interaction have been the focus of numerous investigations, reactive FFEs in learner-learner interaction have gone greatly underresearched, with the exception of Fuji and Mackey (2009), Zhao and Bitchener (2007), and Adams, Nuevo, and Egi (2011). At least in the dataset from the present study, reactive FFEs occur equally as often as preemptive FFEs when learners interact with each other. This dissertation helps to shed light on the effectiveness of the cognitive processes involved in learner-initiated corrections. Unlike teacher-initiated corrective feedback, learner-initiated reactive FFEs are triggered by both actual and perceived errors, affording opportunities for language learning that teacher-learner interaction would not allow, as it would be practically impossible to find learner-initiated

reactive FFEs in teacher-learner interaction (cf. Loewen, 2005). Whereas learners would probably never question the accuracy of the information provided by their instructor, they would, and do, question the accuracy of the information provided by a peer, promoting negotiation, hypothesis testing, and consolidation of knowledge. Moreover, another unique advantage of corrective feedback in learner-learner interaction may be the learners' selectivity in the forms they choose to attend to. If a peer is "ready" to point something out, his or her partner is likely "ready" to learn it. In NS-NNS interaction, on the other hand, corrections might not always be aimed at linguistic features that the learner is ready to acquire.

From a pedagogical perspective, this study lends support to student-centered instruction. It shows that learners provide each other with feedback, be it solicited or unsolicited, and that in the majority of instances, the information provided is accurate. Moreover, the results confirm that classmates can be a valuable resource, as students internalized and were able to use a large proportion of the linguistic information discussed in the course of the collaborative task. It is true that provision of feedback was not consistent, as some errors went unnoticed, and others were left unresolved, and feedback was not always targetlike, as other studies have also found (Adams, 2006; Fuji & Mackey, 2009; LaPierre, 1994; Leeser, 2004; Zhao & Bitchener, 2007). Undoubtedly, instructor intervention would be needed to capitalize on those particular learning opportunities in which a peer's knowledge is not sufficient (cf. Fuji & Mackey, 2009). However, the proportion of unresolved or incorrectly-resolved FFEs was significantly lower than FFEs in which a successful resolution was reached. In other words, the results of the present study confirm that the benefits of learner-learner interaction outweigh its potential drawbacks.

Additionally, the results serve to underscore the benefits of carefully designed collaborative writing tasks in promoting language learning, as they provide optimal conditions

for form-focused attention within a meaning-focused task. The task learners were asked to do for the present study maximized learning opportunities, as it not only prompted both members of the dyad to focus on form by having each learner write, but also it prompted learners to edit their drafts, urging them to pay attention to aspects of the language that might have otherwise gone unnoticed. Crafting collaborative writing tasks in such a way that learners may direct their attentional resources to both form and meaning may be especially important in foreign language classrooms that enroll L2 and HL learners. As suggested by Bowles (2011a), tasks that include a writing component may provide learning opportunities for both types of learners, with each of them contributing in specific ways to the successful completion of the task.

At the same time, one of the pedagogical implications of the present study is that, even when the task includes a writing component, HL learners may not benefit as much from the interaction as L2 learners. Even though the task provided numerous learning opportunities for HL learners, especially in terms of orthography, many of these did not translate into learning, as evidenced by the low retention rates. It is likely that HL learners would benefit more from being paired with a classmate of a similar proficiency level or linguistic background than with a less proficient L2 learner. However, as previously discussed, the current data does not permit a firm conclusion as to whether the differential factor is proficiency or linguistic background. It would be necessary to have data from HL-HL dyads and L2-HL dyads matched for proficiency in order to determine whether pairing learners by linguistic background or by proficiency level leads to greater learning gains.

It is important to note, however, that the relatively limited benefits for HL learners are not due to the L2 learners' inability to provide quality feedback, given that the L2 partners were highly accurate in the information they provided overall, and especially on issues of orthography.

One of the possible explanations discussed above was related to peer perception, in the sense that HL learners may not feel compelled to seek the L2 learners' assistance, even with matters of orthography, if they perceive them as being considerably less proficient than themselves. Thus, to maximize learning opportunities for both L2 and HL learners, it is not enough to include a written task, but it may also be necessary for the instructor to provide guidance regarding the value of peer feedback. Instructor intervention would also be useful in reassuring learners of the accuracy of their partner's feedback, which would in turn build trust between peers.

A caveat to keep in mind is that it cannot be determined from the present study whether the low retention rate on the part of the HL learners was due to task perceptions or peer perceptions. In other words, it is difficult to say whether HL learners did not benefit as much from the interaction because of their interlocutor or because of the type of task they were asked to do, which they likely perceived as being rather informal and not particularly demanding in terms of linguistic accuracy. Future studies should examine whether learning outcomes for HL learners would be greater when interacting with other HL learners, as well as whether HL learners would make greater linguistic gains from completing written tasks that target formal registers, such as composing or editing academic papers. Lastly, considering that the majority of instances in which HL learners failed to incorporate information provided by their peers dealt with matters of orthography, future studies should explore more in depth not only the extent to which HL learners focus on form when it comes to orthography but also their perception of the importance of proper spelling and accent placement.

5.4 Limitations and directions for further research

The present study explored the effects of peer collaboration in L2-L2 and L2-HL dyads, revealing some advantages and disadvantages of each type of pairing. However, as mentioned in

the previous section, one of the limitations of the present study is that it did not include data from HL-HL dyads. Comparing the learning opportunities and outcomes of L2-L2, L2-HL, and HL-HL interaction would better inform instructional and policy decisions in Spanish language programs. Furthermore, it would be necessary for future research on learner-learner interaction to include attitudinal data in order to examine a possible link between peer perception and learning outcomes, especially when learners of different linguistic background are asked to work together. Knowing how these L2 and HL learners perceive each other might help elucidate the differences in learning gains found in this study. On a related note, the differences in proficiency levels observed between learners in mixed dyads could be a confounding factor, affecting peer perception and, in turn, learning outcomes. While the present study reflects the reality of many intermediate foreign language classrooms, where students of different levels and backgrounds work together, it would be ideal to examine the interaction of all three types of proficiency-matched dyads (L2-L2, L2-HL, and HL-HL) enrolled in the same course.

Another limitation of the present study is that it is impossible to know whether linguistic quandaries discussed during the interactions were due to a competence problem (i.e., lack of knowledge) or a performance problem (i.e., communicative pressure and processing limitations). Presumably, FFEs arise when learners notice an actual gap or hole in their own or their partner's interlanguage; however, they may also arise in light of perceived gaps. Even if an FFE is not triggered by a lack of knowledge, it is still indicative of learner difficulty (Loewen, 2005), and the exchange might be effective, at the very least, in consolidating the learners' existing knowledge (Swain, 1995). Therefore, while the lack of a pretest is a limitation of this and all interaction studies, it is still possible to measure learning as "an increase in the accurate use of the targeted forms in subsequently elicited situations" (Loewen, 2005, p. 367). Still, analyzing

instances of confirmation of knowledge separately from clear instances of provision of "new" knowledge would offer a more complete picture as to the effects of learner-learner interaction on language learning.

Additionally, even though employing meaningful individual production tasks may be a more valid way to assess learning gains than tailor-made posttests, a limitation of the current research design is that cases of avoidance (NA) were missed opportunities to capture evidence of learning. In other words, it is impossible to determine whether learners avoided using specific forms discussed during interaction due to their inability to recall the information provided by their partners or due to their inability to recall the exact wording of the jointly produced narrative. Future studies should complement the data from the individual production tasks with tailor-made posttests, as Bitchener (2004) did, to determine more precisely the extent of learning outcomes, particularly with regard to the cases of avoidance. Another possibility is that NA cases were the result of avoidance due to the learners' lack of confidence in the form provided by their interlocutor. In other words, it is possible that learners remembered the information but were unsure that it was correct and thus chose to rephrase or omit that part of the story. Future studies could explore this possibility by including think-aloud protocols during the post-treatment tasks. Alternatively, future studies could use stimulated-recall sessions after the post-treatment tasks to directly probe into the reasons why certain parts of the story were reworded or omitted.

Lastly, while the findings of this study indicate that L2 learning does take place in the course of task-based interaction, it is important to exercise caution when establishing implications in terms of second language acquisition from this dissertation, given not only that knowledge retention was assessed over a relatively short period of time (2 weeks), but also that the results can only provide evidence of item learning. As mentioned in chapter 3, incorporation

of linguistic information that learners provided each other was traced for specific items, or exemplars, rather than for evidence of rule learning (cf. Skehan, 1998). It would not be possible with the current research design to conclusively determine whether interaction leads to rule learning or not.

5.5 Conclusion

This study contributes to expand our knowledge base on how learner-learner interaction serves as a medium for L2 learning. The data suggest that interactional exchanges in which learners attend to form within a meaningful context may be facilitative of acquisition, as indicated by the successful use of a considerable proportion of the linguistic information in subsequent individual tasks. This study also provides further evidence that collaborative writing tasks may be particularly helpful in promoting learner-generated attention to a wide range of linguistic features rather than just lexical items, as some previous studies have suggested (Fuji & Mackey, 2009; Williams, 1999; Zhao & Bitchener, 2007). Moreover, this investigation sheds light on the effects of preemptive and reactive focus on form. Results indicate not only that learners provide each other with solicited and unsolicited feedback, but also that self- and other-initiated attention to form may be equally effective in promoting language learning.

Furthermore, the results help to elucidate the role of learner linguistic profile (L2 or HL) in task-based interaction. Whereas previous research on L2-HL interaction has only speculated the extent to which these two types of learners benefit from collaborating with each other, the current study offers empirical evidence of differential learning outcomes. While benefits are not entirely one-sided in favor of L2 learners, the data suggest that HL learners may not benefit from the interaction as much as their L2 counterparts. Given that this is the first study to document learning gains from L2-HL interaction, it is clear that further research is needed to tease apart the

factors that may influence the effectiveness of L2-HL interaction, such as proficiency

differences, peer perceptions, and task perceptions, which would help to implement classroom

practices that are most beneficial for both types of learners.

REFERENCES

Adams, R. (2004). *Learner-learner interactions: Implications for second language acquisition.* (Unpublished Ph.D. thesis). Georgetown University. Retrieved from ProQuest Digital Dissertations.

Adams, R. (2006). L2 tasks and orientation to form: A role for modality? *ITL International Journal of Applied Linguistics, 15*(2), 7-33.

Adams, R. (2007). Do second language learners benefit from interacting with each other? In A. Mackey (Ed.), *Conversational interaction in second language acquisition* (pp. 29-51). Oxford: Oxford University Press.

Adams, R., Nuevo, A. M., & Egi, T. (2011). Explicit and implicit feedback, modified output, and SLA: Does explicit and implicit feedback promote learning and learner-learner interactions? *Modern Language Journal, 95*, 42-63.

Adams, R., & Ross-Feldman, L. (2008). Does writing influence learner attention to form? In D. Belcher & A. Hirvela (Eds.), *The oral-literate connection: Perspectives on L2 speaking, writing, and other media interactions* (pp.243-266). Ann Arbor, MI: University of Michigan Press.

Aissen, J. (2003). Differential object marking: Iconicity vs. economy. *Natural Language and Linguistic Theory, 213*, 435-448.

Bennett-Kastor, T. (2002). The "frog story" narratives of Irish-English bilinguals. *Bilingualism: Language and Cognition, 5*(2), 131-146.

Berman, R. & Slobin, D. (1994). *Relating events in narrative: The cross-linguistic study of narrative structure*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Bitchener, J. (2003). The Effects of Individual Learner Factors and Task Type on Negotiation: A
Study of Advanced Japanese and Korean ESL Learners. *Australian Review of Applied
Linguistics, 26*(2), 63-83.

Bitchener, J. (2004). The Relationship between the Negotiation of Meaning and Language
Learning: A Longitudinal Study. *Language Awareness, 13*(2), 81-95.

Blake, R. J., & Zyzik, E. C. (2003). Who's helping whom? Learner/Heritage-speakers' networked
discussions in Spanish. *Applied Linguistics, 24*(4), 519-544.

Bowles, M. (2011a). Exploring the role of modality: L2-Heritage learner interactions in the
Spanish language classroom. *Heritage Language Journal, 8*(1), 30-65.

Bowles, M. (2011b). Measuring implicit and explicit linguistic knowledge: What can heritage
language learners contribute? *Studies in Second Language Acquisition, 33*(2), 247-271.

Bowles, M. (in press). Task-Based interactions of L2-Heritage learner pairs in Spanish
language classrooms. *Modern Language Journal*.

Bygate, M. (1996). Effects of task repetition: appraising learners' performances on tasks. In
Willis, J. & D. Willis (Eds.), *Challenge and change in language teaching* (pp. 136-146).
London: Heinemann.

Bygate, M. (2001). Effects of task repetition on the structure and control of oral language. In M.
Bygate, P. Skehan, & M. Swain (Eds.), *Researching pedagogic tasks: Second language
learning, teaching and testing* (pp. 23-48). Harlow: Longman.

Carreira, M., & Kagan, O. (2011). The results of the national heritage language survey:
Implications for teaching, curriculum design, and professional development. *Foreign
Language Annals, 44*(1), 40-64.

Carreira, M. & Potowski, K. (2011). Commentary: Pedagogical implications of experimental

    SNS research. *Heritage Language Journal, 8*(1), 134-151.

Colombi, M. C. (1997). Perfil del discurso escrito en textos de hispanohablantes: teoría y

    práctica. In M. C. Colombi and F. Alarcón (eds.), *La enseñanza del español a*

    hispanohablantes: praxis y teoría (pp. 175-189). Boston: Houghton Mifflin.

Cumming, A.(1990). Metalinguistic and ideational thinking in second language composing.

    Written Communication, 7(4), 482-510.

De la Fuente, M. (2002). Negotiation and oral acquisition of L2 vocabulary: The roles of input

    and output in the receptive and productive acquisition of words. *Studies in Second*

    Language Acquisition, 24(1), 81-112.

Doughty, C., & Varela, E. (1998). Communicative focus on form. In C. Doughty & J. Williams

    (Eds.), *Focus on form in classroom second language acquisition* (pp. 114–138). New

    York: Cambridge University Press.

Doughty, C., & Williams, J. (1998). *Focus on form in classroom second language acquisition*.

    New York: Cambridge University Press

Ellis, R., & He, X. (1999). The roles of modified input and output in the incidental acquisition of

    word meanings. *Studies in Second Language Acquisition, 21*(2), 285-301.

Ellis, R. (1992). *Second language acquisition and language pedagogy*. Multilingual Matters.

Ellis, R., Basturkmen, H., & Loewen, S. (2001a). Learner uptake in communicative ESL lessons.

    Language Learning, *51*(2), 281–318.

Ellis, R., Basturkmen, H., & Loewen, S. (2001b). Preemptive focus on form in the ESL

    classroom. *TESOL Quarterly, 35*(3), 407-432.

Farrokhi, F. & Gholami, J. (2007). Reactive and preemptive language related episodes and uptake in an EFL class. *Asian EFL Journal, 9*(2), 58–92.

Fernandez Dobao, A. (2012). Collaborative dialogue in learner-learner and learner-native speaker interaction. *Applied Linguistics*, *33*(3), 229-256.

Fujii, A., & Mackey, A. (2009). Interactional feedback in learner-learner interactions in a task-based EFL classroom. *International Review of Applied Linguistics*, *47*(3-4), 267-301.

Gregg, K.R. (1984). Krashen's monitor and Occam's razor. *Applied Linguistics 5*(2), 79-100.

Gass, S. (1997). *Input, interaction and the second language learner*. Mahwah, NJ: Lawrence Erlbaum.

Gass, S. (2004). Conversation analysis and input-interaction. *The Modern Language Journal, 88*(5), 597-602.

Gass, S. M., & Varonis, E. M. (1994). Input, interaction, and second language production. *Studies in Second Language Acquisition, 16*(3), 283-302.

Gass, S. M., & Varonis, E. M. (1986). Sex differences in non-native speaker/nonnative speaker interactions. In R. R. Day (Ed.), *Talking to learn: Conversation in second language acquisition* (pp. 327-351). Cambridge, MA: Newbury House.

Gass, S., Mackey, A., Alvarez-Torres, M., & Fernandez-Garcia, M. (1999). The effects of task repetition on linguistic output. *Language Learning, 49*(4), 549-581.

Gass, S., Mackey, A., & Ross-Feldman, L. (2005). Task-based interactions in classroom and laboratory settings. *Language Learning, 55*(4), 575–611.

Garcia Mayo, M., & Pica, T. (2000). L2 learner interaction in a foreign language setting: Are learning needs addressed? *International Review of Applied Linguistics*, *38*(1), 35-58.

He, A. (2010). The heart of heritage: Sociocultural dimensions of heritage language learning. *Annual Review of Applied Linguistics, 30*, 66-82.

Hubert, M. (2009). *The relationship between writing and speaking in the U.S. university Spanish language classroom.* (Unpublished Ph.D. thesis). Purdue University. Retrieved from ProQuest Digital Dissertations.

Ingold, C. W., Rivers, W., Tesser, C. C., & Ashby, E. (2002). Report on the NFLC/AATSP survey of Spanish language programs for native speakers. *Hispania, 85*, 324-329.

Johnson, D., & Johnson, R. (1975). *Learning together and alone*. Englewood Cliffs, NJ: Prentice Hall.

Kim, Y. (2009). The effects of task complexity on learner-learner interaction. *System, 37*(2), 254-68.

Kim, Y., & McDonough, K. (2008). The effect of interlocutor proficiency on the collaborative dialogue between Korean as a second language learners. *Language Teaching Research, 12*(2), 211-234.

Kim, J-H., Montrul, S. and Yoon, J. (2009). Binding interpretation of anaphors in Korean heritage speakers. *Language Acquisition, 16*(1), 3-35.

Krashen, S. (1980). The input hypothesis. In J. Alatis (Ed.). *Current Issues in Bilingual Education*. Washington, DC.: Georgetown University Press.

Krashen, S. (1982). *Principles and practice in second language acquisition*. Oxford: Pergamon.

Krashen, S. (1985). *The input hypothesis: Issues and implications*. New York: Longman.

Keck, C. M., Iberri-Shea, G., Tracy-Ventura, N., & Wa-Mbaleka, S. (2006). Investigating the

 empirical link between task-based interaction and acquisition: A meta-analysis. In J. M.

 Norris & L. Ortega (Eds.), *Synthesizing research on language learning and teaching* (pp.

 91-131). Amsterdam: John Benjamins.

Knightly, L., Jun, S., Oh, J., & Au, T. (2003). Production benefits of childhood overhearing.

 Journal of the Acoustic Society of America, 114, 465-474.

Kondo-Brown, K. (2001). Bilingual heritage students' language contact and motivation. In Z.

 Dörnyei & R. Schmidt (Eds.), *Motivation and second language acquisition* (pp. 425-

 452). Honolulu: University of Hawaii.

Kowal, M., & Swain, M. (1994). Using collaborative language production tasks to promote

 students' language awareness. *Language Awareness, 3*(2), 73-93.

LaPierre, D. (1994). *Language output in a cooperative learning setting: Determining its*

 effects on second language learning. (Unpublished master's thesis). University of

 Toronto. Retrieved from ProQuest Digital Dissertations.

Lee, J.S. (2002). The Korean language in America: The role of cultural identity in heritage

 language learning. *Language, Culture and Curriculum, 15*, 117-133.

Leeman, J. (2003). Recasts and second language development: Beyond negative evidence.

 Studies in Second Language Acquisition, 25(1), 37–63.

Leeser, M. (2004). Learner proficiency and focus on form during collaborative dialogue.

 Language Teaching Research, 8(1), 55-81.

Leow, R. (1997). Attention, awareness, and foreign language behavior. *Language Learning,*

 47(3), 467-505.

Leow, R. (2000). A study of the role of awareness in foreign language behavior: Aware versus unaware learners. *Studies in Second Language Acquisition, 22*(4), 557-584.

Li, S. (2010). The effectiveness of corrective feedback in SLA: A meta-analysis. *Language Learning, 60*(2), 309-365.

Lipski, J. (1993). Creoloid phenomena in the Spanish of transitional bilinguals. In A. Roca & J. Lipski (Eds.), *Spanish in the United States* (pp. 155-173). Berlin: Mouton.

Loewen, S. (2005). Incidental focus on form and second language learning. *Studies in Second Language Acquisition, 27*, 361–386.

Long, M. (1996). The role of the linguistic environment in second language acquisition. In W. C. Ritchie & T. K. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 413-468). San Diego, CA: Academic Press.

Long, M. & Porter, P. (1985). Group work, interlanguage talk and second language acquisition. *TESOL Quarterly 19*(2), 207-227.

Lynch, A. (2008). The linguistic similarities of Spanish heritage and second language learners. *Foreign Language Annals, 41*(2), 252-281.

Lyster, R., & Ranta, L. (1997). Corrective feedback and learner uptake: Negotiation of form in communicative classrooms. *Studies in Second Language Acquisition, 19*(1), 37-66.

Lyster, R. (2004). Differential effects of prompts and recasts in form-focused instruction. *Studies in Second Language Acquisition, 26*(3), 399-432.

Mackey, A. (1999). Input, interaction, and second language development: An empirical study of question formation in ESL. *Studies in Second Language Acquisition, 21*(4), 557-87.

Mackey, A. (2006). Feedback, noticing and instructed second language learning. *Applied Linguistics, 27*(3), 405-430.

Mackey, A., Gass, S., & McDonough, K. (2000). How do learners perceive interactional feedback? *Studies in Second Language Acquisition, 22*(4), 471–497.

Mackey, A., & Goo, J. (2007). Interaction research in SLA: A meta-analysis and research synthesis. In A. Mackey (Ed.), *Conversational interaction in second language acquisition* (pp. 407-452). Oxford: Oxford University Press.

Mackey, A., Oliver, R., & Leeman, J. (2003). Interactional input and the incorporation of feedback: An exploration of NS-NNS and NNS-NNS adult and child dyads. *Language Learning 53*, 35–66.

Mackey, A., & Philp, J. (1998). Conversational interaction and second language development: Recasts, responses, and red herrings? *The Modern Language Journal, 82*(3), 338–356.

Mayer, M. (1971). A *boy, a dog, a frog, and a friend*. New York: Dial.

McDonough, K. (2005). Identifying the impact of negative feedback and learners' responses on ESL question development. *Studies in Second Language Acquisition, 27*(1), 79-103.

McLaughlin, B. (1987). *Theories of second language learning*. London: Edward Arnold.

Mikulski, A. M. (2006). Accent-uating rules and relationships: Motivations, attitudes, and goals in a Spanish for Native Speakers class. *Foreign Language Annals, 39*(4), 660-682.

Montrul, S. (2008). *Incomplete Acquisition in Bilingualism. Re-examining the Age Factor*. Amsterdam: John Benjamins.

Montrul, S. (2010a). Current issues in heritage language acquisition. *Annual Review of Applied Linguistics 30*, 3-23.

Montrul, S. (2010b). How similar are adult second language learners and Spanish heritage speakers? Spanish clitics and word order. *Applied Psycholinguistics, 31*(1), 167-207.

Montrul, S. (2011a). Introduction: Spanish heritage speakers: Bridging formal linguistics, psycholinguistics and pedagogy. *Heritage Language Journal, 8*(1), i-vi

Montrul, S. (2011b). Morphological errors in Spanish second language learners and heritage speakers. *Studies in Second Language Acquisition 33*(2), 155-161

Montrul, S. & Bowles, M. (2010) Is grammar instruction beneficial for heritage language learners? Dative case marking in Spanish. *The Heritage Language Journal, 7*(1), 47-73.

Montrul, S., & Foote, R. (2012). Age of acquisition interactions in bilingual lexical access: A study of the weaker language of L2 learners and heritage speakers. *The International Journal of Bilingualism 16*(2), published online 8 May 2012.

Montrul, S., Foote, R., & Perpiñán, S. (2008). Gender agreement in adult second language learners and Spanish heritage speakers: The effects of age and context of acquisition. *Language Learning, 58*(3), 503-553.

Montrul, S., & Perpiñán, S. (2011). Assessing differences and similarities between instructed L2 learners and heritage language learners in their knowledge of Spanish Tense-Aspect and Mood (TAM) Morphology. *The Heritage Language Journal*, *8*(1), 90-133.

Muranoi, H. (2000). Focus on form through interaction enhancement: Integrating formal instruction into a communicative task in EFL classrooms. *Language Learning, 50*(4), 617-673.

Nixon, R. M. (2007). *Collaborative and independent writing among adult Thai EFL learners: Verbal interactions, compositions, and attitudes* (Unpublished Ph.D. thesis). University of Toronto. Retrieved from ProQuest Digital Dissertations.

O'Grady, W, M. Lee, & M. Choo. (2001). The acquisition of relative clauses by heritage and

non-heritage learners of Korean as a second language: A comparative study. *Journal of*

Korean Language Education 12, 283-94.

Oh, J., Jun, S., Knightly, L., & Au, T. (2003). Holding on to childhood language memory.

Cognition, 86, 53-64.

Oliver, R., & Mackey, A. (2003). Interactional context and feedback in child ESL classrooms.

The Modern Language Journal, 87(4), 519-533.

Oliver, R. (2000). Age differences in negotiation and feedback in classroom and pairwork.

Language Learning, 50(1), 119-151.

Oliver, R. (2002). The patterns of negotiation for meaning in child interactions. *The Modern*

Language Journal, 86(1), 97-111.

Patanasorn, C. (2010). Effects of procedural content and task repetition on accuracy and fluency

in an EFL context. (Unpublished Ph.D. thesis). Northern Arizona University. Retrieved

from ProQuest Digital Dissertations.

Philp, J., Oliver, R., & Mackey, A. (2006). The impact of planning time on children's task-based

interactions. *System, 34*(4), 547-565.

Pica, T., Holliday, L., Lewis, N., Berducci, D., & Newman, J. (1991). Language learning through

interaction. *Studies in Second Language Acquisition, 13*(3), 343-376.

Polinsky, M. (2005).Word class distinctions in an incomplete grammar. In D. Ravid & H. Bat-

Zeev Shyldkrot (Eds.), Perspectives on language and language development (pp. 419-

436). Dordrecht, Netherlands: Kluwer.

Polinsky, M. (2008). Relative clauses in heritage Russian: Fossilization or divergent grammar? In A. Antonenko, J. F. Bailyn, C. Y. Bethin (Eds.), *Annual Workshop on Formal Approaches to Slavic Linguistics* (pp. 333-358). Ann Arbor: Michigan Slavic Publications.

Porter, P.A. (1986). How learners talk to each other: Input and interaction in task-centered discussions. In R.R. Day (Ed.), *Talking to learn: Conversation in second language acquisition* (pp. 200-22). Rowley, MA: Newbury House.

Potowski, K. (2002). Experiences of Spanish heritage speakers in university foreign language courses and implications for teacher training. *ADFL Bulletin, 33*(3), 35-42.

Potowski, K. (2005). *Fundamentos de la enseñanza del español a los hablantes nativos en los Estados Unidos*. Madrid, Spain: Arco Libros.

Potowski, K., Jegerski, J. & Morgan-Short, K. (2009). The effects of instruction on linguistic development in Spanish heritage language speakers. *Language Learning, 59*(3), 537-579.

Qi, D. S., & Lapkin, S. (2001). Exploring the role of noticing in a three-stage second language writing task. *Journal of Second Language Writing, 10*(4), 277-303.

Ross-Feldman, L. (2007). Interaction in the classroom: Does gender influence learning opportunities? In A. Mackey (Ed.), *Conversational interaction in Second Language Acquisition: A collection of empirical studies* (pp. 63-77). Oxford: Oxford University Press.

Roca, A. (1997). La realidad en el aula: logros y expectativas en la enseñanza del español para estudiantes bilingües. In M. C. Colombi & F. X. Alarcón (Eds.), *La enseñanza del español a hispanohablantes: Praxis y teoría* (pp. 55-64). Boston: Houghton Mifflin.

Russell, J. & Spada, N. (2006). The effectiveness of corrective feedback for the acquisition of L2

    grammar: A meta-analysis of the research. In J.M. Norris & L. Ortega (Eds.),

    Synthesizing research on language learning and teaching (pp. 133-64). Amsterdam :

    Benjamins.

Sachs, R., & Polio, C. (2007). Learners' uses of two types of written feedback on a L2 writing

    revision task. *Studies in Second Language Acquisition, 29*(1), 67-100.

Sato, M., & Lyster, R. (2007). Modified output of Japanese EFL learners: Variable effects of

    interlocutor vs. feedback types. In A. Mackey (Ed.), *Conversational interaction in second*

    language acquisition: A series of empirical studies. Oxford: Oxford University Press.

Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics,*

    11(2), 129–158.

Schmidt, R. (2001). Attention. In P. Robinson (Ed.), *Cognition and second language instruction*

    (pp. 3-32). Cambridge University Press.

Schmidt, R., & Frota, S. (1986). Developing basic conversational ability in a second language: A

    case study of an adult learner of Portuguese. In R. R. Day (Ed.), *Talking to learn:*

    Conversation in second language acquisition (pp. 237-326). Rowley, MA: Newbury

    House.

Schwartz, A. M. (2003). ¡No me suena! Heritage Spanish speakers' writing strategies. In A.

    Roca & M. C. Colombi (Eds.), *Mi lengua: Spanish as a heritage language in the United*

    States (pp. 235-256). Washington, DC: Georgetown University Press.

Silva-Corvalán, C. (1994). *Language Contact and Change: Spanish in Los Angeles*. Oxford:

    Oxford University Press.

Skehan, P. (1998). *A cognitive approach to language learning*. Oxford: Oxford University Press.

Storch, N. (2001). How collaborative is pair work? ESL tertiary students composing in pairs. *Language Teaching Research 5*(1), 29-53.

Suzuki, M. (2008). Japanese learners' self-revisions and peer revisions of their written compositions in English. *TESOL Quarterly, 42*(2), 209-232.

Swain, M. (1985) Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in Second Language Acquisition* (pp. 235-256). New York: Newbury House.

Swain, M. (1995). Three functions of output in second language learning. In G. Cook & B. Seidlhofer (Eds.), *Principle and practice in applied linguistics: Studies in honour of H.G. Widdowson* (pp. 125-144). Oxford: Oxford University Press.

Swain, M. (1998). Focus on form through conscious reflection. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 64-81). New York, NY: Cambridge University Press.

Swain, M. (2005). The output hypothesis: Theory and research. In E. Hinkel (Ed.), *Handbook on research in second language teaching and learning* (pp. 471-83). Mahwah, NJ: Lawrence Erlbaum Associates.

Swain, M. (2000). The output hypothesis and beyond: Mediating acquisition through collaborative dialogue. In J.P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 97–114). Oxford: Oxford UP.

Swain, M., & Lapkin, S. (1995). Problems in output and the cognitive processes they generate: A step towards second language learning. *Applied Linguistics, 16*(3), 371-391.

Swain, M., & Lapkin, S. (1998). Interaction and second language learning: Two adolescent French immersion students working together. *The Modern Language Journal, 82*(3), 320-337.

Swain, M. & Lapkin, S. (2001). Focus on form through collaborative dialogue: Exploring task effects. In M. Bygate, P. Skehan and M. Swain (eds.), *Researching Pedagogic Tasks: Second-Language Learning, Teaching and Testing* (pp. 99–118). London: Longmans.

Teschner, R. V. (1981). Spanish for native speakers: Evaluating twenty five Chicano compositions in a first-year course. In G. Valdés, A. G. Lozano, & R. García-Moya (Eds.), *Teaching Spanish to the Hispanic bilingual: Issues, aims, and methods* (pp. 115-139). New York: Teachers College Press.

Valdés, G. (1981). Pedagogical implications of teaching Spanish to the Spanish-speaking in the United States. In G. Valdés, A. G. Lozano, & R. García-Moya (Eds.), *Teaching Spanish to the Hispanic bilingual: Issues, aims, and methods* (pp. 3-20). New York: Teachers College Press.

Valdés, G. (1997). The teaching of Spanish to bilingual Spanish-speaking students: Outstanding issues and unanswered questions. In M. C. Colombi & F. Alarcón (Eds.), *La enseñanza del español a hispanohablantes* (pp. 8–44). Boston, MA: Houghton Mifflin.

Valdés, G. (2001). Heritage language students: Profiles and possibilities. In J. K. Peyton, D. Ranard, & S. McGinnis (Eds.), *Heritage languages in America: Preserving a national resource* (pp. 37–80). McHenry, IL : Delta Systems.

VanPatten, B. (1990). Attending to form and content in the input. *Studies in Second Language Acquisition, 12*, 287-301.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Watanabe, Y., & Swain, M. (2007). Effects of proficiency differences and patterns of pair interaction on second language learning: Collaborative dialogue between adult ESL learners. *Language Teaching Research, 11*(2), 121-142.

Weissberg, B. (2000). Developmental relationships in the acquisition of English syntax: Writing vs. speech. *Learning and Instruction, 10*, 37–53.

White, L. (1987). Against comprehensible input: the input hypothesis and the development of L2 competence. *Applied Linguistics 8*(2), 95-110.

Williams, J. (1999). Learner-Generated attention to form. *Language Learning, 49*(4), 583-625.

Williams, J. (2001). The effectiveness of spontaneous attention to form. *System, 29*(3), 325-340.

Williams, J. (2008). The speaking-writing connection in second language and academic literacy development. In D. Belcher & A. Hirvela (Eds.), *The oral-literate connection: Perspectives on L2 speaking, writing, and other media interactions* (pp.10-25). Ann Arbor, MI: University of Michigan Press.

Zhao, S. Y., & Bitchener, J. (2007). Incidental focus on form in teacher-learner and learner-learner interactions. *System, 35*(4), 431-447.

APPENDIX A: LANGUAGE BACKGROUND QUESTIONNAIRE

Thank you for taking the time to complete this survey. The following information about your language background is very important for the interpretation of this study's results.
All information will be kept confidential, and it will only be made available to those involved in the analysis and evaluation of the study.

Full name:_____
Best email address to reach you at:_____

- Age: _____

- Sex: Male   Female

- Were you born in the U.S.?
YES   NO – please specify where you were born:

- If you were not born in the U.S., how old were you when you moved to the U.S.?_____

- If you were not born in the U.S., how often do you go back to your country of origin?
  Never   Once every few years   Once a year   A few times a year

- Where are your parents/caregivers from? (if not applicable, please write N/A)
  Mother: _____   Father: _____

- What languages do your parents/caregivers speak? (if not applicable, please write N/A)
  Mother: _____   Father: _____

- What do your parents do for a living? (if not applicable, please write N/A)
  Mother: _____   Father: _____

- What is your parents' highest level of schooling? (select one for each)
  <u>Mother</u>: Elementary school   <u>Father</u>: Elementary school
           Middle school   Middle school
           High school   High school
           College   College
           Grad school   Grad school
           N/A   N/A

- At what age did you begin to learn English?
Since birth   When I was _____

- At what age did you begin to learn Spanish?
Since birth   When I was _____
As a child…

…what language/s did you <u>hear</u> in your home?

Only Spanish   Only English   Both   Other (specify) _____

…what language/s did your parents/caregivers use mostly when speaking to you?

Only Spanish   Only English   Both   Other (specify) _____

…what language/s did you use mostly when speaking to your parents/caregivers?

Only Spanish   Only English   Both   Other (specify) _____

…what language/s did you use with your siblings?

Only Spanish   Only English   Both   Other (specify) _____

…what language/s did you use when speaking with other family members?

Only Spanish   Only English   Both   Other (specify) _____

…what language/s did you use with your friends?

Only Spanish   Only English   Both   Other (specify) _____

- Did you read books in Spanish while growing up?

Yes   No

- Please indicate where you attended school:

Elementary school: ☐ In the U.S.   ☐ Outside the U.S. – Please specify: _____
Middle school: ☐ In the U.S.   ☐ Outside the U.S. – Please specify: _____
High school: ☐ In the U.S.   ☐ Outside the U.S. – Please specify: _____

- What was the primary language of instruction at school? (for instance, the language used in Math or History courses)

Elementary school: ☐ English   ☐ Other – Please specify: _____
Middle school: ☐ English   ☐ Other – Please specify: _____
High school: ☐ English   ☐ Other – Please specify: _____

- How many years of Spanish as a foreign language did you have in elementary school? _____

- How many years of Spanish as a foreign language did you have in middle school? _____

- How many years of Spanish as a foreign language did you have in high school? _____

- Please indicate which Spanish courses you have taken or are currently taking at UIUC. Select all that apply:

SPAN 122   SPAN 103   SPAN 141   SPAN 142
SPAN 204   SPAN 200   SPAN 208   SPAN 228
Other 200-level course(s)
Other 300-level course(s)
Other 400-level course(s)

- Please list any <u>other</u> foreign languages you have studied or are currently studying. Start with the most recent.

Language	Level *(for example, beginner)*

- Please list any stays in Spanish-speaking countries that were longer than 2 weeks. Start with the most recent.

Where? (city/country)	How long?	When?

- Rate your current overall language ability in ENGLISH
  1 = understand but cannot speak
  2 = understand and can speak with great difficulty
  3 = understand and speak but with some difficulty
  4 = understand and speak comfortably, with little difficulty
  5 = understand and speak fluently like a native speaker

- Rate your current overall language ability in SPANISH
  1 = understand but cannot speak
  2 = understand and can speak with great difficulty
  3 = understand and speak but with some difficulty
  4 = understand and speak comfortably, with little difficulty
  5 = understand and speak fluently like a native speaker

- On a scale from 1 to 5, rate your abilities in Spanish
  (1 =poor; 2= needs work; 3=good; 4= very good; 5= native speaker command)
  Reading =   Speaking=   Listening=   Writing=

Currently…
  …what language/s do you use mostly when speaking to your parents/caregivers?
  Only Spanish   Only English   Both   Other (specify) _____
  …what language/s do you use with your siblings?
  Only Spanish   Only English   Both   Other (specify) _____
  N/A
  …what language/s do you use when speaking with other family members?
  Only Spanish   Only English   Both   Other (specify) _____
  …what language/s do you use with your friends?
  Only Spanish   Only English   Both   Other (specify) _____

- Do you read books in Spanish in your spare time (other than what is required for class)?
  Yes   No
- What kind of writing do you do in Spanish?
  Papers required for class

Informal emails/letters
Creative writing (short stories, poetry, etc.)
Other – Please specify: _____

- In general, which language(s) do you prefer to use?

English   Spanish   Other:_____
It depends on whom I talk to – Please specify: _____

- Do you feel Spanish is your native language or like a second (or foreign) language?

It's my native language
It's a second (or foreign) language to me

- Is there anything you would like to improve about your Spanish language skills?

No
Yes – Please specify: _____

****
Please take a few minutes to answer these questions about your writing habits in Spanish.

1. In previous Spanish courses, how frequently have you participated in peer review sessions after writing a composition? (when you and a classmate exchange papers and revise each other's drafts)
   Almost always   Frequently   Occasionally   Rarely   Very Rarely   Never

2. In previous Spanish courses, how frequently have you worked together with a classmate to brainstorm or plan your composition before writing it?
   Almost always   Frequently   Occasionally   Rarely   Very Rarely   Never

3. In previous Spanish courses, how frequently have you revised your own composition in class, before turning it in?
   Almost always   Frequently   Occasionally   Rarely   Very Rarely   Never

4. Before writing a composition in Spanish, what strategies do you use to plan what you are going to write? Indicate how frequently you do each of the following:
   6 = Almost always   5 = Frequently   4 = Occasionally   3 = Rarely   2 = Very Rarely   1 = Never

I outline some ideas in English
I outline some ideas in Spanish
I write most of it in English, and then I translate it into Spanish
I think of what to say in English, then mentally translate it into Spanish
I ask a classmate to help me think of ideas
I ask a tutor to help me think of ideas
If you use any other strategies to plan what you are going to write in Spanish, please list them here: _____

5. As you are writing a composition in Spanish, what do you do when you are not sure how to say something? Indicate how frequently you do each of the following:
6 = Almost always   5 = Frequently   4 = Occasionally   3 = Rarely   2 = Very Rarely   1 = Never

I use a dictionary
I use an online translator
I ask a classmate
I ask the instructor
I ask a tutor

If you do anything else when you are not sure how to write something in Spanish, please list it here: _____

6. After writing a composition in Spanish, what strategies do you use to revise it? Indicate how frequently you do each of the following:
6 = Almost always   5 = Frequently   4 = Occasionally   3 = Rarely   2 = Very Rarely   1 = Never

I use spell-check in Word (or any other word processing program)
I self-edit it with the help of a dictionary
I ask a classmate to read it and revise it
I ask a tutor to read it and revise it
I ask the instructor to give me comments (e.g., during office hours)

If you use any other strategies to revise compositions in Spanish, please list them here:
_____

For the following items, please indicate whether you agree or disagree with each of the statements.
6 = Completely Agree   5 = Mostly Agree   4 = Slightly Agree   3 = Slightly Disagree
2 = Mostly Disagree   1 = Completely Disagree

- When I am assigned to write a composition, I prefer to work alone.
- I can write a better composition when I work with a partner than when I work alone.
- I enjoy writing a composition together with a classmate.
- Writing a composition with a classmate is frustrating.
- I feel comfortable revising a classmate's draft.
- I find it unpleasant to revise a classmate's draft.
- I like having a classmate revise my composition.
- I prefer to revise my own draft without the help of a classmate.
- Before writing, I like generating ideas with a partner.
- I prefer to plan what to write by myself than with a partner.
- I feel comfortable brainstorming with a partner before writing a composition.
- It is awkward to generate ideas with a classmate before writing.

APPENDIX B: TREATMENT SESSION INSTRUCTIONS

Instructions for the planning stage

- You and your partner have 6 minutes to plan what you're going to write.
- The point is to have figured out what you will say (and how you will say it) before writing anything. Work together to tell the story in Spanish (in the past), as if you were writing it.
- Also, think about: a title for the story, the characters' names, and the location of the story
- Just talking, no writing! When time is up, I will give you some paper to write the story.

Instructions for the drafting stage

- You and your partner have 20 minutes to write the story together, using the ideas you came up with while planning.
- Both of you should be writing, but the stories should be identical. Please don't copy from your partner's draft.
- Remember: the story should be narrated in the past.
- Narrate the entire story; don't skip parts.
- Write out the story in paragraphs, not isolated sentences. If needed, include transitions ("later", "the next day", etc.).
- You don't need to write one sentence per picture. Think of it as a creative task, rather than just reporting events.
- No outside help! (other than your partner)

Instructions for the revision stage

- Take a few minutes to compare your drafts, make sure they are identical, and also check for the following:

Vocabulary
- ✓ All in Spanish?
- ✓ Any words or phrases that are not clear and that you could rephrase?

Grammar
- ✓ Is the whole story in the past? Are preterit and imperfect used correctly?
- ✓ Do verbs agree with the subject?
- ✓ Do nouns agree with adjectives and articles?
- ✓ Are pronouns (lo/la, se, le/les) used correctly?
- ✓ Are prepositions (en, por, para, a, con, de) used correctly?
- ✓ Is word order OK?

Spelling
- ✓ Any words misspelled?
- ✓ Any accents missing? Or are there accents where there shouldn't be?

- Make all the changes you want (in red). When you are finished making changes, please turn in your draft.

APPENDIX C: POST-TREATMENT TASK INSTRUCTIONS

Instructions for the immediate post-treatment task

- Now, you have 20 minutes to write the same story again, but this time on your own.
- Try to use the same plot/ideas you came up with for the draft you just turned in.

Instructions for the delayed post-treatment task

- Today you will be writing the same story you wrote with a partner two weeks ago, but this time on your own.
- Take a few minutes first to go over the pictures and refresh your memory.
- Try to use the same plot/ideas you came up with last time.