

**Handbook of Advanced Proficiency in SLA****Chapter 6: Interaction-driven L2 learning: Advanced Learners**

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*Abstract* (50-150 words): The current chapter provides a summary and synthesis of research involving advanced learners from an interactionist perspective. Beginning with a brief overview of the interaction approach to second language acquisition (SLA), this chapter then addresses how proficiency has been operationalized in this domain. Following a discussion on empirical research focusing on advanced proficiency learners and topics associated with interaction, including corrective feedback, peer interaction, task-based language teaching (TBLT), and interaction in computer-mediated contexts, this chapter then concludes with pedagogical implications for language instructors and future directions for research on interaction and advanced proficiency learners.

*Key words*: Interaction Hypothesis, Corrective feedback, Task-Based Language Teaching (TBLT), CALL (Computer-Assisted Language Learning)

## **Introduction**

Since Long's first iteration (1981) and subsequent updates of the interaction hypothesis (1981, 1996), a growing body of second language acquisition (SLA) research has demonstrated a robust positive connection between conversational interaction and second language (L2) development (Mackey & Goo, 2007). Having evolved from an hypothesis to an extended framework (Gass & Mackey, 2006, 2007; Mackey, 2012), interaction research has expanded from initial examinations into the impact of conversational adjustment on learners' L2 development (Gass & Varonis, 1994; Mackey, 1999) to investigations into a wide range of interactional factors and processes, including the role of a variety of individual differences such as working memory (e.g., Mackey et al. 2002), aptitude (e.g., Trofimovich et al., 2007), anxiety (e.g., Sheen, 2008), and motivation (e.g., You & Dornyei, 2016). Scholars have also examined the role of L2 proficiency (e.g., Watanabe & Swain, 2007), with results demonstrating a complex relationship amongst features of interaction, such as that between learners' noticing of corrective feedback, and advanced L2 proficiency (e.g., Lee, 2013; Li, 2014; Mackey & Philp, 1998).

Beginning with an overview of the interaction approach to SLA, including a brief history of the approach and its findings in relation to learner proficiency this chapter examines interaction research that has made connections to advanced proficiency learners, including studies of corrective feedback, peer interaction, task-based language teaching (TBLT), and interaction in computer-mediated contexts (CMC). The chapter will conclude with pedagogical implications for teachers of advanced language learners and suggestions for future directions in terms of advanced proficiency and interaction-driven language learning.

### **The Interaction Approach**

The interaction approach to second language acquisition (Long, 1996; Gass, 1997; Gass & Mackey, 2006) posits that the combination of exposure to modified input, output, and negotiation for meaning via the provision of positive and negative corrective feedback, is essential to L2 development. This link between interaction and L2 development has been empirically tested in over a hundred studies since the 1980s (Abbuhl et al., 2015), providing robust evidence for positive benefits on a variety of grammatical and discourse features within a variety of contexts and proficiency levels (see Keck et al., 2006; Mackey & Goo, 2007; Cobb, 2010; Ziegler, 2016a for meta-analyses).

#### *Key elements of the interaction approach*

Input, which can be defined as the language that a learner is exposed to through listening, reading, writing, speaking, or other mediums, is a key component of the interaction approach. Operationalized as the positive evidence learners receive about the target language (Gass et al., 1998), input can be modified during interaction to be made more comprehensible, thereby adjusting to the needs of learners of varying proficiencies during the negotiation (Long, 1981; Mackey, 2012). Previous research has sought to examine the ways in which interlocutors modify the input to make it more comprehensible to language learners (Krashen, 1977, 1980), thereby providing learners the opportunity to confirm or reject their own hypotheses about what is possible in the target language. For example, studies have found that more advanced learners may be better able to leverage their attentional resources to notice features in the input than lower proficiency learners (Gass, Svetics & Lemelin, 2003), providing further opportunities for L2 development.. However, as essential as input is in the process of language acquisition,

Mackey (2012) points out it is the ways in which learners interact with input and their interlocutors through the interactional processes of negotiating for meaning, giving and receiving corrective feedback, and producing modified output, that are likely to lead to L2 development (Mackey, 2012; Mackey et al., 2011).

Output, another key component of L2 development in the Interaction Hypothesis, is the language that learners produce themselves during interaction. Swain (1995, 2005) argues that the opportunity to produce language and correct non-targetlike production after feedback allows learners to test out hypotheses regarding the target language, directs them to attend to target language forms, and to notice any gaps between their interlanguage and the target language, thereby potentially promoting fluency and automatization (Swain, 1995). This modified output, or pushed output, which is defined as the reformulation of a learners' utterance in response to feedback or self-monitoring (Mackey, 2012), is believed to facilitate L2 development by driving learners to modify their production in a more target-like manner (Swain, 1985, 1995; Shehadeh, 2002; McDonough, 2005; McDonough & Mackey, 2006). However, as Mackey (2012) points out, the process of modifying output can be as important to language development as the actual modification, with learners still benefiting whether they produce the correct target forms or not.

Negotiation for meaning, or adjustments made during conversation to achieve understanding between interlocutors, involves the elements of input, output, and corrective feedback, and is a key component of the interaction approach. Negotiation during interaction has been shown to facilitate language learning by allowing learners to receive comprehensible input and to modify their own output to be better understood (Mackey, 2012). Confirmation checks, clarification requests, comprehension checks, repetitions, prompts, and segmentations of words or phrases are all strategies interlocutors might employ while negotiating for meaning (Mackey,

2007). Negotiation might also take the form of corrective feedback, which provides negative evidence to the learner. Negative evidence, defined as input that supplies direct or indirect evidence of ungrammatical forms to the learner (Leeman, 2003, 2007), indicates to learners that there was an issue with their language production, potentially drawing their attention to gaps between their IL and the TL, thereby leading to L2 development. In addition, negotiation may prime learners to be more attentive to future input, raising their awareness of specific features of the target language and providing them with multiple opportunities to confirm or disconfirm hypotheses they have formed regarding the L2. Previous studies have also demonstrated a link between negotiation for meaning and proficiency level (Oliver & Mackey, 2003), with higher proficiency learners tending to negotiate more with native speaker interlocutors than those with a lower proficiency.

Recent research has expanded the construct of negotiation to include interactional modifications occurring in response to other forms of implicit and explicit feedback, including recasts, which are a form of corrective feedback where the interlocutor rephrases all or part of a learner's immediately preceding non-targetlike utterance while the focus remains on meaning rather than form or object (Long, 2007; Mackey & Gass, 2015; Richards & Schmidt, 2002) and metalinguistic feedback (Mackey, 2012). Overall, research has shown that receiving feedback and participating in negotiation may support learners' L2 development by providing both positive and negative evidence, with a growing body of research having demonstrated the positive effects of different types of corrective feedback on a wide range of features of L2 development in both classroom and laboratory settings (see Mackey & Goo, 2007; Lyster & Saito, 2010; Li, 2010, for meta-analyses).

Although these studies have shown that both implicit and explicit forms of corrective feedback facilitate L2 development in a range of language learning contexts, the comparative efficacy of explicit feedback, such as meta-linguistic feedback, or more implicit forms of feedback, such as recasts, has been hotly debated in the current literature (Ellis et al., 2006; Lyster & Saito, 2010; Goo & Mackey, 2013). For example, research suggests that recasts are facilitative of L2 development as they enhance the salience of the target feature and direct learners to contrast their erroneous utterance with their interlocutors' reformulation (e.g., Goo & Mackey, 2013; Long, 1996, 2007), thereby focusing learners' attentional resources on the target form. Importantly, regardless of efficacy compared to more explicit forms of corrective feedback recasts are the form of feedback most often used by teachers in advanced proficiency classrooms (Zyzik & Polio, 2008). Some scholars suggest that this is due to the fact that implicit feedback does not interrupt the flow of meaning-making in the classroom and is more natural (Ellis & Sheen, 2006). However, studies have demonstrated that the influence of feedback, such as recasts, on L2 development is mitigated by a variety of factors, including target feature (e.g. phonology, morphosyntax, e.g., see Egi, 2007) and setting (Oliver, 2000), as well as learners' individual differences (Mackey, 2012), such as the learner's proficiency or developmental level (Mackey & Philp, 1998).

Second language proficiency, which can be defined as a learner's linguistic ability in a given domain (e.g. speaking, listening, reading, writing) based on a given outcome measure, has been operationalized in a variety of ways in the interaction literature. Some studies identify learners as advanced by their current institutional status, such as by their enrollment year in a given language program (Li, 2009), by standardized tests, such as the TOEFL or TSE (Test of Spoken English; Lee, 2013) or the Oral Proficiency Interview (OPI), or by using independently

designed objective and subjective measures (i.e., custom-made assessment targeting specific aspects of proficiency or self-reports or instructor ratings). Many studies have also investigated the relationship between interaction and proficiency, with the prototypical study dividing students into groups according to proficiency level, as measured by one of the possibilities above, and examining the impact of an interventional treatment by measuring a individual or multiple learning outcomes with a pre-, post-, or delayed-posttest design. In order to triangulate findings, some studies additionally incorporate introspective measures of noticing or awareness, such as stimulated recall interviews (see Gass & Mackey, 2016), uptake sheets (Allwright, 1984), or other qualitative methods. The following section describes studies that have made connections to advanced proficiency learners in the domains of corrective feedback, peer interaction, TBLT, and computer-mediated communication, utilizing these methodologies .

### **Interaction and Advanced Learners**

Previous studies in the field of interaction have sought to identify the types of interactions that most benefit learners at various levels and have suggested a need to alter the elements of interaction, such as corrective feedback, in relation to students' proficiency levels (Han & Jung, 2016; Panove & Lyster, 2002; Suzuki, 2005). For example, researchers have examined the relationship between the quality or quantity of interactional features and the explicitness of corrective feedback and uptake at various proficiency levels (e.g., Mackey & Philp, 1998). In addition, studies have investigated to what degree learners of different proficiency levels are more or less likely to notice feedback (Gass, 1997; Philp, 2003), as well as what kinds of feedback instructors of advanced learners tend to prefer and provide (Zyzik & Polio, 2008). Other studies have examined how proficiency plays a role when peers interact with each other

(e.g., Kim & McDonough, 2008; Leiser, 2004). For example, research suggests that learners' proficiency level may have an impact on the quantity and quality of interaction, with findings indicating that pairing high proficiency learners with lower proficiency learners may lead to more collaboration (Storch, 2001; Yule & Macdonald, 1990). However, Kowal and Swain (1997) found that lower proficiency learners felt less comfortable interacting with advanced proficiency learners than with learners of similar proficiencies, suggesting that proficiency may impact both affective and cognitive factors. These studies have also examined the connections between proficiency and interaction in a variety of settings, such as classroom and computer-mediated settings (e.g., Sauro, 2009) and during task-based interactions (Ellis, 2009), as well as the relationship between individual factors, such as proficiency, and interactional features, like corrective feedback.

#### *Corrective feedback and advanced proficiency learners*

Previous work has uncovered a complex relationship between the effects of corrective feedback and L2 proficiency (see Nassaji, 2013). Some studies suggest that less proficient learners benefit more from explicit corrective feedback moves, such as metalinguistic explanations and prompts, than higher proficiency learners (Ammar & Spada, 2006; Trofimovich et al., 2007). For example, Lin and Hedgcock (1996) demonstrated that learners receive sufficient amounts of feedback according to their own stage of development, with low proficiency learners receiving more feedback than high proficiency learners. However, high-proficiency learners were more likely to demonstrate uptake, or the integration of new features into their own interlanguage, of the feedback they received than their lower-proficiency peers. These findings and others (Williams, 2001) suggest that higher proficiency learners might stand

to benefit more from certain types of corrective feedback in interaction-driven learning than low-proficiency learners, due to the availability of more attentional resources (Gass, Svetics & Lemelin, 2003), prior knowledge, and linguistic experiences (Philp, 1999).

For example, Li (2009, 2014) has examined the interplay between the effects of corrective feedback and L2 proficiency in a variety of studies with FL learners of Chinese, finding relationships between proficiency level and the explicitness and target of feedback. In Li (2009), 23 learners from two different proficiency levels, as determined by their enrollment year in the Chinese program, received either implicit feedback in the form of recasts or explicit metalinguistic explanations. The students engaged in communicative tasks and received the feedback on their production of Chinese classifiers. Results demonstrated that proficiency influenced the efficacy of the different forms of feedback for the lower proficiency learners, in that they benefited more from explicit feedback than implicit; however, the advanced learners benefited from both explicit and implicit feedback. These findings are consistent with the results of Mackey and Philp (1998), who found that for more advanced learners, negotiation for meaning with recasts was more effective than negotiation alone. However, the same feedback move, recasts, was not effective for less advanced learners. In 2014, Li updated his study to investigate the role of the linguistic target in mediating this relationship with 78 Chinese learners learning two different target structures. For one of the two target structures, Li again found that implicit recasts benefited the high, but not the low, proficiency learners. In addition, for more advanced learners, the effects of implicit feedback were more durable at the delayed posttest than the effects of metalinguistic feedback. However, for the other structure investigated, recasts were effective for both the high and low proficiency learners, suggesting that target feature may also

play an important mediating role in the relationship between learners' proficiency levels and the efficacy of corrective feedback.

Overall, then, research seems to suggest that corrective feedback might have varying effects on learners of different proficiency levels. Research seems to support this conclusion, with findings from Gass, Svetics, and Lemelin (2003) suggesting that more advanced learners can leverage their attentional resources to better perceive corrective feedback than their lower-proficiency counterparts. It is also possible that more advanced learners are better able to store and retrieve feedback, due to their prior knowledge and linguistic experience (e.g., Philp, 1999, 2003; Atanassova, 2012). For example, Philp (1999) found that more advanced learners were more accurate in recalling implicit corrective feedback (recasts) after engaging in task-based interaction than were lower proficiency learners. Additionally, Philp (2003) found that more advanced learners were more likely to accurately recall recasts. Similarly, the results of Atanassova (2012) demonstrated advanced learners were significantly more likely to report awareness of corrective feedback, as well as awareness of the target form. In addition, advanced learners' awareness of feedback was not negatively impacted by the type of feedback or target feature, a result that differs from previous research (e.g., Li et al., 2016). For example, studies have suggested that the recognition of corrective feedback may vary according to the target of the feedback. Carpenter et al. (2006), for instance, found that morphosyntactic recasts were less accurately recognized by advanced ESL learners than phonological or lexical recasts. Further evidence comes from Li et al. (2016), who manipulated the time between error and feedback to see if immediate or delayed feedback affected uptake for learners at different proficiency levels. When 120 EFL Chinese students, divided into high and low proficiency groups according to mid-term exam scores, performed two dictogloss tasks, the researchers found that immediate

feedback was most effective for low proficiency learners, while high proficiency learners benefited equally from both immediate and delayed feedback. However, the researchers attributed the difference to the cognitive demands of the task for learners of differing levels rather than to the timing of the corrective feedback. Evidence such as this suggests effects for proficiency in the uptake or noticing of corrective feedback moves during interaction.

Some studies have also uncovered different preferences for feedback that vary according to learner proficiency level. A qualitative study by Lee (2013) found that advanced ESL learners (as judged by their enrollment in a U.S. doctoral program and TSE scores) preferred immediate explicit corrections during classroom interactions. According to questionnaire and interview data, the learners stated they did not feel frustrated by this form of corrective feedback and preferred having all their errors immediately corrected. This was in contrast to the beliefs of their instructors, who did not feel it was appropriate to correct all errors. Furthermore, an analysis of classroom recordings indicated that instructors primarily provided corrective feedback in the form of recasts, highlighting the mismatch between learners' and instructors' perceptions. These results are similar to those of Kaivanpanah, Alavi, and Sepehrinia (2015), who found that advanced learners preferred feedback that elicited self-correction, while teachers remained concerned about the negative impact of providing explicit and elicitive forms of feedback. Taken together, these studies point to a need for further research into the complex interplay between corrective feedback, uptake, and learners' preferences for feedback.

#### *Peer interaction and advanced proficiency learners*

A large body of research has demonstrated the efficacy of interaction for facilitating L2 development (e.g., Keck et al., 2006; Mackey & Goo, 2007; Ziegler, 2016a), with findings

showing that learners who work on a task together tend to perform better than they would working alone (Storch, 1999). As many communicative approaches to language teaching, like TBLT, involve collaborative group work, one of the challenges an instructor might face is how to group learners for tasks in a productive way, especially in classrooms with learners of mixed ability and proficiency levels. In order to understand the role of pair or group dynamics and how this might impact L2 performance and development, researchers have examined how peers can provide opportunities for input, output, negotiation, and corrective feedback, and how these interactional opportunities might vary according to proficiency or native speaker status (see Philp, Adams & Iwashita, 2014; Pica et al., 1996). García Mayo & Pica (2000), for example, found that advanced learners were able to provide as much input, feedback, and output to their peer interlocutors as native-speaker interlocutors did. Moreover, the advanced learners provided more grammatically complex and accurate feedback to their partner than did native speakers, indicating that the quality of input varied across group and proficiency.

A number of studies have also examined the role of proficiency in learners' production of Language Related Episodes (LREs), defined as the times during an interaction in which learners discuss aspects of the language needed to fulfill some task or activity (Swain, 1998; Swain & Lapkin, 1995, 1998). For example, in one of the first studies in this line of research, Swain and Lapkin (1998) found that two advanced learners interacting during a task produced a wide range of LREs. These promising results inspired other researchers to investigate the effects of proficiency level on LRE rates (Leeser, 2004), with findings demonstrating that as proficiency level increased (according to course level), so did the number of LREs that occurred in learner-learner task-based interactions (Williams, 1999, 2001). In addition, as learners' proficiency level increased, so did the frequency with which they were correctly able to resolve their LREs. Leeser

(2004) also found that the number of grammatically focused LREs produced during learner-learner interaction increased with proficiency level. In this study, learners were grouped in the proficiency-based dyads high-high, high-low, and low-low. Groups with two high proficiency learners produced more LREs focused on grammatical accuracy than on lexical items, whereas groups with two low proficiency learners focused more on lexical items. The findings of this study suggest that proficiency groupings can impact the quantity of negotiation, as well as the opportunities for learners to focus on form, that occurs during a task. Furthermore, learners' proficiency affected whether learners focused more on lexical or grammatical features during the interaction.

More recently, Kim and McDonough (2008) examined the impact of interlocutor proficiency on the production and resolution of LREs by pairing learners with intermediate and advanced interlocutors. In addition, this study also examined how pair dynamics might be influenced by interlocutors of different proficiency levels. Results indicated that learners produced and resolved significantly more lexical LREs when collaborating with advanced interlocutors, adding support to previous studies (e.g., Leiser, 2004; Williams, 2001). However, the occurrence of grammatical LREs did not exhibit the same pattern, with findings demonstrating no significant differences across interlocutor proficiency level. Furthermore, learners perceived interaction with advanced interlocutors to be especially beneficial, as they were able to receive answers to grammatical and lexical questions that might arise during the interaction, potentially supporting noticing and the development of metalinguistic knowledge. Similar results were obtained by Choi and Iwashita (2016), with learners producing and resolving more LREs overall when they interacted with an interlocutor of higher proficiency. Lexical LREs were produced more frequently than grammatical LREs, although in contrast to

Kim and McDonough (2008), the occurrence of grammatical LREs also increased when learners interacted with a higher proficiency interlocutor, providing support for Leiser's (2004) earlier findings. Overall, the greater occurrence and resolution of LREs during interactions involving advanced interlocutors suggests that advanced interlocutors may be more likely to discuss language forms, as well as seek out solutions during interactive tasks, than lower proficiency learners, thereby potentially increasing their opportunities for L2 development.

In addition to affecting the production and resolution of LREs, proficiency may also influence or interact with pair dynamics during learner interactions. For instance, Yule and Macdonald (1990) found a difference in the amount of negotiation for meaning that occurred when high versus low proficiency learners were allowed to play the more dominant role in a group. During an interactive map task, the learner who was assigned the role of direction provider to another student who looked at a different map was provided with the more dominant role in the interaction. Results showed that when the high proficiency learner was assigned the role of providing directions, little negotiation for meaning or LREs occurred, but when the lower proficiency learner gave directions, much more negotiation was necessary to successfully complete the task, potentially leading to increased opportunities for noticing and subsequent L2 development.

However, other studies have found more complex effects from grouping students by proficiency level (Iwashita, 2001, Watanabe & Swain, 2007). In a study by Iwashita (2001), learners of Japanese were placed in the following dyads: low-low, high-high, and low-high, and performed communicative tasks. Results demonstrated no significant differences in the use of different types of corrective feedback, opportunities for modified output, or production of modified output in the learner pairs of various proficiencies. Using a repeated measures design to

pair individual learners with interlocutors of higher and lower proficiencies, Watanabe and Swain (2007) examined the role of proficiency in different stages of interaction, including pair writing, noticing, reformulation, and text reconstruction. Findings indicated that when paired with lower level interlocutors, learners produced more LREs during the noticing stage and had higher subsequent scores on their text reconstructions. Examinations of the patterns of interaction revealed that the pattern may play a greater role than proficiency, with learners engaged in collaborative interaction styles demonstrating higher scores and more LREs than learners with different, less collaborative interaction styles.

Similar results were obtained by Aldosari (2008), who found that pair dynamics played a more important role than proficiency or task-type in terms of occurrence and resolution of LREs, with more collaborative styles occurring in matched, rather than mixed proficiency, pairs. Similar to Kim and McDonough (2008), pair dynamics appear to be an important factor in the occurrence and resolution of LREs, with results suggesting that intermediate learners would benefit regardless of interlocutor proficiency if a collaborative dynamic occurs. In addition, in order to mitigate the potential discomfort that lower proficiency learners may feel when working with more advanced learners (Kowal & Swain, 1997), advanced learners should be encouraged to maintain an expert rather than dominant role (Kim & McDonough, 2008). More recently, Dao and McDonough (2017) examined the effects of task role in mixed proficiency interaction, finding that when lower level learners held task information, they engaged in more LREs and had higher mutuality than when other task roles were employed, suggesting that task role may mediate the effects of proficiency on the occurrence and resolution of LREs in pair interaction. Overall, although these results indicate that proficiency may impact the quality and outcomes of interaction, they demonstrate that the presence of differing proficiency levels within groups may

be mitigated or influenced by other factors, such as pair dynamics, painting a complex picture of how language proficiency interacts with other individual factors to allow learners to benefit from corrective feedback and peer interaction.

### *Technology, interaction, and advanced learners*

A growing body of research suggests that the positive benefits associated with interaction can and do occur in synchronous computer-mediated communication (SCMC), which includes real-time interaction, as in text-, video-, or multi-modal chat, with results providing encouraging evidence for the use of technology to support and facilitate L2 development (see Ziegler, 2016a, 2016b, for a meta-analysis and review). Scholars have also suggested that the unique opportunities offered by technology-mediated environments might provide advantages over traditional language-learning settings, with studies demonstrating improved saliency (e.g., Smith, 2004; Ziegler, in press), as well as increased opportunities for noticing (e.g., Kelm, 1992; Payne & Whitney, 2002; Pellettieri, 2000; Smith, 2003; Smith & Gorsuch, 2004; Toyoda & Harrison, 2002) and focus on form (e.g., Salaberry, 2000; Yilmaz & Yuksel, 2011). Although research has yielded promising results regarding the efficacy of interaction in SCMC, results may vary across modality, setting, and learner and interlocutor characteristics, including age, L1, and proficiency. For example, in one of the earlier studies examining SCMC, Toyoda and Harrison (2002) examined the text-chat discourse of five students enrolled in an advanced Japanese course. Their results indicated that negotiation patterns and interactional features found in face-to-face (FTF) interaction occur in SCMC, suggesting that text-chat provided developmental opportunities for advanced learners, as well as lower proficiency learners (e.g., Pellettieri, 2000; Salaberry, 2000). Findings also demonstrated differences in interactional patterns between SCMC and FTF modes,

such as variation in turn-taking strategies and the existence of different discourse features and the potential for added opportunities for learners to attend more closely to the form and content of the input, while still maintaining the real-time feel of conversation (Toyoda & Harrison, 2002).

More recently, Van der Zwaard & Bannink (2014) examined the influence of type of communication mode (text-chat compared to video call) on patterns of negotiation between advanced learners and native speakers. Results indicated that mode of communication played an important role, with text-chat negotiation being more to the point and resulting in the resolution of the communication breakdown. Advanced learners in this context also seemed more willing to ask more questions and persist in negotiation in order to resolve the trouble source in text-chat. These findings are similar to previous research suggesting benefits of written text-chat with intermediate and lower level learners (e.g., Abrams, 2003; Beauvois, 1992; Chun, 1994; Kern, 1995). However, because these studies did not directly compare the interaction of learners of different proficiencies, it is not possible to draw firm conclusions regarding differences in the quantity or quality of interaction across beginning, intermediate, and advanced learners.

As with research examining interaction and proficiency in FTF contexts, studies in SCMC have also sought to deepen our understanding of the complex relationship between interlocutor proficiency and pair dynamics. For instance, Kitade (2000) examined learners interacting with interlocutors of intermediate and advanced proficiency during text-chat, with learners stating they noticed more of what they had learned from advanced interlocutors during the collaborative activity. Sauro (2009), on the other hand, suggests that the high level of learners' proficiency, determined to be advanced based on their successful completion of a Swedish state exam, may have resulted in learners' noticing fewer instances of feedback provided by their interlocutors

during text-chat. Sauro suggests that the length of some of the recasts may have been too long to be effective, leading to reduced saliency and noticing.

In addition, learner proficiency might influence not only learners' frequency of noticing, but also learners' provision of feedback. For instance, Sotillo (2005) found that there were more opportunities for error correction episodes during text chat interactions where the interlocutor was an advanced learner compared to a native speaker of English. More error correction episodes also led to successful corrections during the interactions with advanced interlocutors, mirroring the results of research examining advanced proficiency learners and LREs in face-to-face environments. Advanced learner interlocutors also provided significantly more feedback than NS interlocutors, directing more attention to the production of form rather than focusing more closely on the message or information that the learner was attempting to convey.

Overall, the research examining advanced learners in SCMC environments is promising, with findings suggesting that advanced learners may continue to benefit from text-chat in particular. Considering that scholars have expressed concern that negotiation and interaction may not be as useful for advanced learners as for intermediate and lower level learners (Long, 2015), the small body of research yielding positive results during text-chat is encouraging. However, as Ziegler (2013) points out, few studies have examined the effects of interaction in computer-mediated contexts on advanced learners' development, highlighting the need for further research.

### **Pedagogical Implications**

As communication-focused language instruction such as TBLT continues to grow in popularity in language classrooms, language teachers and action researchers should continue to investigate the implications of these interactive pedagogies in authentic classroom settings. Most language classrooms today include learners at a variety of proficiency levels. Language instructors have the challenge of addressing the needs of each individual student while simultaneously meeting those of the class as a whole. For many teachers, this means addressing whether advanced students should be grouped together or if it might be more developmentally beneficial to mix students of different proficiency levels. Teachers must also consider how they might be best able to challenge advanced students while still meeting the needs of less-advanced students. The following section discusses pedagogical implications of the interaction approach and offers recommendations in addressing these issues for language teachers or other stakeholders who work with advanced students.

The research reviewed above suggests that in terms of feedback, explicit corrective feedback may work well for both low proficiency and high proficiency learners. Therefore, when classrooms consist of mixed proficiency learners, explicit correction may stand to benefit the most learners at once. However, when learners are grouped homogeneously by proficiency, advanced learners might benefit more from the flow of meaning-making allowed by implicit correction. Language instructors might also consider varying their feedback style, so that learners of different levels can each benefit in turn from the feedback style for which they are developmentally ready. In addition, the literature on peer-to-peer interaction suggests that more advanced learners working together will engage in similar amounts of negotiation for meaning and LREs as they would if a native-speaker was present. Therefore, when negotiation for meaning is the goal of a task, instructors might consider grouping students homogeneously by

proficiency level and focusing more energy on the lower-proficiency groups. Alternatively, when groups are mixed, instructors might consider assigning the lower proficiency learners the more “dominant” roles in a task, as in Yule and Macdonald (1990) and Dao and McDonough (2017), to ensure that the more advanced speakers do not dominate the activity. Additionally, instructors should encourage advanced learners to maintain an expert rather than dominant role (Kim & McDonough, 2008) to mitigate proficiency imbalances when working in heterogeneous groupings. However, as studies such as Iwashita (2001) point out, the proficiency levels of the members of a group may not matter for pushing learners to modify their output. Therefore, instructors might consider varying their grouping depending on the needs of the learners. Importantly, language instructors should be aware of the variety of factors, such as pair dynamics and other individual differences, that have been shown to influence the success of task-based and peer-to-peer interactions, and group students accordingly.

Research examining interaction in computer- or technology-mediated environments suggests that advanced learners may benefit from interacting via text-chat, especially when they interact with an advanced learner rather than a native speaker (Sotillo, 2005). In this context, advanced learners could work on resolving communication breakdowns and asking questions, areas that have been shown to be supported and enhanced by the text-chat environment. The judicious integration of text-chats and other technologies into the second language classroom is one exciting area of future investigation for researchers and instructors of advanced L2 learners.

### **Conclusions and Future Directions**

The research described above has pointed towards a complex and developing understanding of the effects of interaction on learners at advanced levels of proficiency. In the

domain of corrective feedback, research shows varying effects for learners at different proficiency levels with particular effects for proficiency in the uptake or noticing of corrective feedback moves during interaction. Based on these findings, language instructors may wish to vary their feedback style so that learners of different levels can benefit. In addition, findings from research on learner-learner interaction demonstrates that the proficiency of group members can impact the quantity and quality of negotiation and focus on form that occurs during a task, as well as what kinds of features learners focus on the most during task-based interactions. Considering these findings, instructors might aim to vary their grouping depending on the needs of the learners. Finally, research examining advanced learners in SCMC environments has suggested that advanced learners tend to benefit from text-chat by resolving more communication breakdowns and negotiating for meaning longer than learners of lower proficiency levels. Advanced learners also tended to provide more corrective feedback in SCMC when working in groups than when working with native speakers, suggesting that peer interaction may be equally or more beneficial than interaction with a native-speaker interlocutor.

Overall, the interaction approach to SLA has benefited from a robust body of research examining learners at a variety of proficiency levels. However, there are many promising directions for future investigations. For example, despite the large number of studies described in this chapter that have linked interaction with L2 development, not all researchers subscribe to the idea that interaction is the primary means by which language proficiency develops. The hypothesis was criticized at times for not addressing all aspects of the learning process, and some have taken issue with the validity of the hypothesis (for a review of these criticisms and responses see Ellis, 2003; Mackey & Gass, 2015). However, these criticisms were generally targeted at the earlier, stronger version of Long's hypothesis rather than the updated version that

focuses on particular aspects of the SLA process (Long, 1996). In addition, many studies in the interactionist tradition, and in the applied linguistics field in general, have focused on college-age students in university settings, with a heavy focus on English as the L1 or L2, highlighting the need for more research on younger or older learners as well as with target languages other than English. Furthermore, the majority of studies have examined learners of intermediate proficiency, with much less known about the effects of interaction on highly proficient learners. This has resulted in some researchers calling for methodological reforms to improve the generalizability of findings (Plonsky, 2013, 2014). More longitudinal and replication studies have also been called for to better understand the effects of interaction over time (Mackey, Abbuhl & Gass, 2012). Additionally, researchers in the field have called for more integration of sociocognitive aspects of interaction, including the effects of social relationships and context on interaction (Lantolf, 2012), in order to deepend our understanding of the relationship between interaction and L2 performance and development. This final section suggests research topics that could benefit from further examination of interaction-driven learning with advanced proficiency learners.

One new and growing area of interaction research is studies that examine the interplay of individual differences, such as aptitude, with instructional treatments. These “aptitude treatment interaction” (ATI) studies (see Li, 2015; Révész, 2011; Yilmaz, 2013 for examples) often combine quantitative and qualitative methods to match (or mis-match) learners to conditions thought to be most compatible with their aptitude (see Vatz et al., 2013 for a thorough overview). While this is still an under researched area in the field, future studies of interaction should consider drawing on the same rigorous methodologies employed in ATI studies in order to further investigate the role of proficiency in second language learning. By matching learners of

various proficiency levels to conditions (for example, a certain type of corrective feedback, or type of task), researchers can enhance our understanding of complex relationships at work when varying teaching methods are employed with learners at advanced proficiency levels.

Furthermore, we suggest that future research employ mixed methodology designs, as well as examine findings both quantitatively and qualitatively, thus providing a more holistic perspective on the process and product of L2 learning outcomes. For example, quantitative methods could employ empirical tests of learners' aptitudes alongside proficiency, as well as utilize advanced technology, such as eye-tracking, to more precisely measure learners' noticing of new forms at various proficiency levels. Qualitative data can be gathered via stimulated recall interviews (see Gass & Mackey, 2016) to further investigate the various processes learners engage in at advanced proficiency levels. Regardless of design, there is a clear need for more SLA researchers to directly investigate proficiency and to specifically design studies with advanced proficiency learners in mind. This line of inquiry has important implications for language teachers, as well as students with higher language proficiency. Research that carefully compares and contrasts instructional treatments with learners at various proficiency levels may help educators make more informed decisions about the kinds of tasks and feedback they provide in their classrooms. This in turn will help learners discover how to best leverage their advanced proficiency to continue to improve their language skills.

This chapter has sought to synthesize the current research and understandings regarding language learners with advanced proficiency from an interactionist approach to second language acquisition. By examining studies of corrective feedback, peer interaction, task-based language teaching (TBLT), and interaction in computer-mediated contexts, we have aimed to provide a comprehensive overview of what is currently known about the relationship between advanced

proficiency and interaction-driven language learning. While there is still much work to be done to understand this complex relationship, it is our hope that researchers and practitioners can utilize this chapter to explore new questions in this domain and apply them to authentic language-learning contexts, thus helping to drive the field forward in terms of both empirical and pedagogical progress.

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