# 9 Mastering Connectives in a Second Language

## 9.1 INTRODUCTION

Connectives are notoriously difficult to master for second language learners, because they require an array of complex competences. Learners must know how to use them appropriately in various genres and registers, have a fine-grained understanding of the meaning differences between connectives used to convey similar discourse relations, and also automatize this knowledge so that it is activated during discourse processing (implicit knowledge), and not only when they consciously elicit usage rules (explicit knowledge).

In the second language acquisition literature, an important body of studies has empirically demonstrated that learners experience many difficulties with connectives, even at advanced stages of language acquisition. When producing texts with connectives, these difficulties are both quantitative (overuses and underuses) and qualitative (misuses). These difficulties are reflected in the fact that the use of connectives is often moderately or even negatively related to writing quality (Crossley, Kyle & McNamara, 2016). Comparatively, studies that have investigated learners' comprehension of connectives are fewer and far apart. Yet, the comprehension of connectives is important for reading comprehension, not only in a first but also in a second language (Crosson & Lesaux, 2013).

In this chapter, we will present an overview of current knowledge about learners' use and understanding of connectives, assess the reasons why connectives are problematic for learners, and discuss the competences that foster the acquisition of connectives in a second language. We will argue that research on the second language acquisition of connectives contributes to answering important questions, such as what makes connectives difficult to master (see also Chapter 8), how they are they used across languages (see Chapter 7), and also how they should be included in teaching curricula.



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## 9.2 LEARNERS' USES OF CONNECTIVES

The way learners use connectives in their textual productions has been the topic of a very large body of literature, starting mostly in the 1990s with researchers discussing observations from their own teaching experiences. For example, Lamiroy (1994: 183) reports that Dutch-speaking students of French at university level "encounter very serious difficulties in handling French connectives". She illustrates these problems with examples from students' writings. They include a lack of connectives in contexts where they are needed for coherence, such as a lack of concessive connectives (see Chapter 6), a wrong choice of connective to express a given relation, and an excessive use of a limited set of connectives in contexts where they would not be used by a French-speaking writer. Similar observations were made by Crewe (1990: 317) based on his experience of teaching English in Hong Kong: "The misuse of logical connectives is an almost universal feature of ESL students' writing [. . .]. In Hong Kong, we are all familiar with students who use 'on the contrary' for 'however'/'on the other hand', thus adding an unintended 'corrective' force to the merely 'contrastive' function sought". These interesting observations could not, however, lead to any generalization about learners' difficulties with connectives. For this, a bigger sample of more controlled productions are needed, in the form of corpus data.

This gap has since been filled thanks to the high number of learner corpora that have been created over the past decades (Granger, Gilquin & Meunier, 2015). Many of them have been used to investigate the way learners use connectives, mostly in English as a foreign language. These corpus studies have consistently found differences between the uses of connectives by learners and those of native-speaking writers. For example, Tapper (2005) reports an overall overuse of English connectives by Swedish learners compared to American and British university students. Both datasets come from the International Corpus of Learner English[1] (Granger, Hung & Petch-Tyson, 2002). Tapper found that learners produce a lot more connectives in their essays compared to native speakers. However, the distribution between the various types of connectives (causal, concessive, etc.) was almost identical, as learners overused all types of connectives. Both in learners and native students' writings, the most frequently used connectives were those marking a concessive or a contrastive relation. This is likely due to the fact that

[1] https://uclouvain.be/en/research-institutes/ilc/cecl/icle.html

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these connectives are necessary for the correct relation to be inferred (see Chapter 6) and means that learners have a good grasp of the factors that are necessary to produce a coherent text. Based on holistic scores of writing quality produced on a subset of each corpus, Swedish learners were found to be as competent as native speakers at writing. This may explain why they did not produce misuses of connectives but only differed quantitatively from native writers. A similar result was found by Tazegül (2015) who analyzed the uses of the connective *on the other hand* by Turkish PhD students, and found that they overused this connective but did not misuse it. Again, these learners can be considered to be quite proficient.

Yet, many other studies have provided a more complex picture for advanced learners, by showing that they do not overuse all connectives. In one of them, Granger and Tyson (1996) analyzed the connective uses of French-speaking learners of English, also in the International Corpus of Learner English. In this study, learners were not found to overuse connectives across the board, but only some of them like *indeed*, *in fact* and *moreover*, while underusing others like *however*, *yet*, *therefore* and *thus*. This pattern of over- and underuse was later found in many other studies involving learners from a variety of first languages and backgrounds. For example, Hinkel (2001) analyzed productions of Japanese, Korean, Arabic and Indonesian learners of English, and found that while they globally overused connectives compared to native speakers, they resorted to a smaller repertoire and did not always use them in a way that facilitated textual comprehension for readers (see also Carrió Pastor, 2015 for a similar pattern with Spanish learners, Lee, 2013 for Korean learners, and Zhang, 2014 for similar problems with conclusive connectives used by Chinese learners).

Granger and Tyson (1996) also make two other observations that have been corroborated in many other studies. First, learners tend to almost exclusively use connectives in the sentence-initial position, even if other syntactic positions are possible for many of them (see Chapter 4). Field and Yip (1992) also found that the sentence-initial position was the default position for all non-native writers that they analyzed, and Ha (2014) reported a similar pattern for Korean learners.

The second observation is that learners do not seem sensitive to the differences of registers, and mix informal connectives like *what's more* with formal ones like *moreover*. This is again congruent with the finding by Field and Yip (1992: 26) who reported that learners "give confusing signals of register" using connectives from very different registers alongside each other. In a similar vein, Leedham and Cai (2013) also report an overuse of informal connectives like *besides*, *last but not least*,

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and *what is more* by Chinese students studying at UK universities, and an underuse of more formal connectives like *however* and *therefore*. An overuse of *besides* was also found by Lee and Chen (2009) in their study of Chinese undergraduates.

In addition, while the overuse of connectives was found to globally diminish with proficiency, problems with register remained. For instance, Chen (2014) reports that more advanced Chinese learners start using a more informal style as their proficiency increases. Similarly, Tapper (2005) also observed that very advanced Swedish learners make a heavy use of the connective *still*, whereas both American and British native-speaking students prefer the more formal connectives *however* and *yet* to indicate contrast. An exception to the preference for informal connectives was found by Hu and Li (2015) who report that students from Hong Kong and Singapore adopt a more formal style than both other Asian learners and native speakers. This hints to the fact that learners' first language may influence their use of connectives in L2, an observation we return to later on in this chapter.

While many studies have reported cases of connective overuse, some of them also report marked cases of underuse. In one of them, Don and Sriniwass (2017) found that Malaysian students' essay writings in English contained overall fewer connectives than those of native speakers. In one rare study that has focused on spoken productions, Shi (2017) also found a marked underuse of contrastive and concessive connectives by Chinese learners of English. Interestingly, the overuse of connectives in the sentence-initial position reported above was also found in spoken data. In a study focusing on the connective *thus* by Turkish advanced learners of English, Uçar and Yükselir (2017) also found a marked underuse of this connective compared to natives. However, a more in-depth analysis of the functions of *thus* also revealed another difference between the two groups, as learners overused it to mark cause-consequence relations while neglecting its other functions.

Many studies have documented that learners' difficulties with connectives are not only quantitative. They also qualitatively misuse connectives in their productions. For instance, Hamed (2014) found that Libyan students majoring in English misuse many connectives. The most difficult ones were contrastive and concessive connectives, followed by additives and causals. In a study focusing on the contrastive connectives used by Korean speakers, Park (2013) found misuses of connectives to express contrast such as *in contrast*, *on the contrary* and *on the other hand*. Additionally, it is noticeable that the connective *on the other hand* was the third most frequent one in learners' writings, so this mistake was quite prevalent. Misuses of connectives are also reported

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for Chinese students by Zhang (2014), who found that learners misuse conclusive connectives like *all in all*, *in conclusion*, and *ultimately*.

The findings from corpus studies are further corroborated by controlled experimental contexts, in the form of elicitation tasks. Degand and Hadermann (2009) elicited the use of connectives in French by Dutch-speaking learners using silent videos. Similarly to corpus studies, they report that learners overuse connectives compared to native speakers. In fact, learners used a causal, temporal or contrastive connective every 28.8 words on average compared to every 41.5 words for native speakers. Yet, they also specifically analyzed the use of temporal connectives, and found that learners use as many different temporal connectives as native speakers.

All in all, we can conclude from these studies that learners do not use connectives like native speakers in their textual and spoken productions. These problems include misuses, but also and even more predominantly quantitative problems due to the overuse and underuse of some connectives. These problems are in addition not limited to producing connectives with an appropriate meaning in context, but also include limitations in syntactic placement and inappropriate register. More specifically, learners seem to avoid formal connectives from the written mode.

These production studies are, however, not sufficient to get a full picture of learners' competence with connectives. First, they cannot tell us anything about the way learners actually understand the meaning of each connective, nor do they provide us with answers about the causes of these production difficulties. Another limitation applying in particular to corpus studies is that learners' level of competence in L2 is only reported for the whole group, and is often described in generic terms such as *advanced* or *higher-intermediate*. Similarly, the type of writing task that was performed in the corpus is often only described as an "essay" without more precision about the conditions in which it was performed or the topics. In addition, the role of learners' first language cannot really be ascertained because they are often not compared to learners on the same writing conditions. Finally, the comparison is often made with students writing in their L1. Yet, Bolton, Nelson and Hung (2002) found that students writing in their L1 also overuse connectives compared to professional writers. Thus, it is not clear whether learners' difficulties can be attributed to writing in an L2 or to an immature writing style. For all these reasons, production studies must be complemented by studies assessing learners' comprehension in more controlled experimental contexts, with the use of specific measures assessing the linguistic profile of each participant. We now turn to these studies.

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## 9.3 LEARNERS' COMPREHENSION OF CONNECTIVES

Contrary to production, comprehension cannot be observed directly, hence the need to resort to indirect techniques indicating whether learners understand a connective or not. Depending on the studies, these techniques require a different type of knowledge. In the literature on second language acquisition, a major distinction is often made between learners' explicit and implicit knowledge (e.g., Ellis, 2009; VanPatten & Smith, 2022). Explicit knowledge implies conscious awareness, can be verbalized and is also weakly held, whereas implicit knowledge is more intuitive and unconscious, more systematic and also more deeply held. For example, implicit knowledge would be used when a learner says that a connective is correctly used (or not), without being able to explain why. With explicit knowledge, a learner could verbalize the reasons as to why the connective is correctly or incorrectly used. Conversely, having an explicit and declarative knowledge of a connective does not mean that it will always be used correctly when speaking or understood during reading, as the time pressure of speech planning and online comprehension does not allow access to explicit knowledge.

Both types of knowledge are also typically assessed using different tasks. Explicit knowledge is tested using metalinguistic tasks such as providing judgments, explanations without any time pressure, etc. Implicit knowledge can be assessed either online, as comprehension unfolds while reading or listening, or offline, after the whole process has taken place, in order to assess the product of comprehension. In this section, we illustrate the difference between explicit and implicit knowledge of connectives with studies that have used these various types of tasks.

One of the first experimental studies to systematically assess learners' comprehension of connectives in English was conducted by Steffani and Nippold (1997) with Japanese learners at American universities. In a series of two experiments, they compared learners with age-matched American students. In one experiment, participants were asked to perform a completion task. They were given three sentences describing a context, and a sentence starting with a connective typical of the written mode, such as *nevertheless* or *moreover*. They were asked to write a continuation for the sentence. Answers were then classified as correct or incorrect by the authors. Results indicate that learners have significantly more difficulty in understanding these connectives than native speakers, as they produced only 5 correct continuations on average for the 10 scenarios, against 9.5 for the American students.

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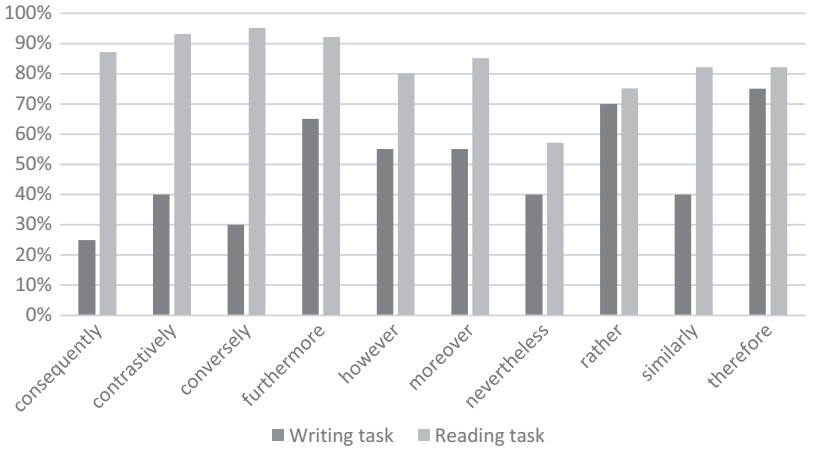



Figure 9.1 Percentage of correct answers for Japanese learners of English across both tasks

However, the authors had also classified sentences containing grammar mistakes as incorrect, even when they reflected a correct interpretation of the connective. If only sentences that demonstrate an incorrect understanding of the connective are counted as incorrect, the learners' score increases to 7.9 correct answers. This score is still significantly lower than that of the native students.

In a second task, students had to choose the appropriate connective from a list of four possibilities to fill in a gap within a small text (reading task). Learners also performed significantly lower than American students on this task, with an average of 83 percent correct answers against 95 percent for the natives. Interestingly, the scores of non-native speakers were quite different for most connectives across both tasks, as illustrated in Figure 9.1, adapted from Steffani and Nippold (1997: 1052).

This study therefore provides some confirmation that learners have difficulties understanding connectives from the written mode, which might explain why they avoid using them in their textual productions. It does not tell us, however, if these difficulties also extend to more frequent connectives, or whether learners are able to use the information provided by connectives to help them understand a text.

Degand and Sanders (2002) investigated this question in a comprehension experiment focusing on causal relations communicated by Dutch and French connectives frequently used in spoken language like *omdat* and *parce que* (both close to the English 'because'). They asked

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French-speaking and Dutch-speaking participants to read 18 short texts that were manipulated to contain explicit (with connective) and implicit (without connective) causal relations. Half of the texts were in Dutch and the other half in French. Participants read all the texts, which means that their scores could be compared across their L1 and their L2. Comprehension was assessed by asking a series of questions after reading the text. In the case of causal relations, it was tested by the use of *why*-questions. Results indicate that participants understand textual content better when it is conveyed explicitly by a connective or a causal paraphrase such as *that is the reason why* than when it is conveyed implicitly. Interestingly, this effect did not differ between their L1 and their L2. This means that participants understood connectives just as well in both languages, but also that they did not need them more in their L2, despite the greater difficulty in understanding a text in a second language. Both results are likely due to the high proficiency level of participants, and also to the exclusive use of frequent causal connectives in the experiment. This study thus provides a step forward by showing that connectives are also beneficial for L2 readers. However, it is limited to causal relations, and does not provide indications about the usefulness of cognitively more complex connectives such as concessive and contrastive connectives (see Chapter 2), nor does it assess comprehension with more formal connectives typical of the written mode.

Wetzel, Zufferey and Gygax (2020) attempted to assess learners' comprehension of connectives using a more diversified set of six different discourse relations, with two different connectives per relation varying in their frequency in written corpus data. This experiment did not include a whole textual context, but only two isolated sentences. Participants were German-speaking learners of French and native French speakers. They were asked to choose the appropriate connective from a list of six possibilities. Results indicate that learners do not master most of these connectives as well as native speakers, but no systematic difference was found between relations, nor did the most frequent connective systemically elicit higher scores compared to less frequent ones. This means that the two factors (relation type and frequency) which were found to be important for first language acquisition (see Chapter 8) do not matter to a similar extent for second language learners. Instead, the authors report a register effect, congruent with the observations from corpus data. One of the connectives they tested, the contrastive connective *par contre*, has a low frequency in written corpora, because it belongs to an informal register. This connective triggered significantly higher scores compared to the more

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frequent *en revanche* that belongs to a more formal register and is more frequent in written genres. Thus, it seems that learners have difficulties specifically with connectives belonging to a formal register bound to the written mode. They also uncovered another factor that may explain learners' performance: the connective *c'est pourquoi* triggered very high scores in view of its low frequency. The authors hypothesized that this may be due to the fact that its meaning, literally 'that is why' in English, is rather transparent. Learners may therefore have been able to understand it compositionally thanks to their understanding of the words it is made of. At the other end of the scale, highly opaque connectives like *en outre* in French (a connective meaning roughly 'in addition') are difficult even for a sizable portion of adult native speakers (see Chapter 6).

These studies thus provide a nuanced picture of learners' understanding of connectives, indicating that they are able to integrate the meaning of frequent connectives but have more difficulties with connectives from a higher register. They were all conducted using offline methodologies, in other words analyzing the product of comprehension. Other studies have also integrated an online component, in order to compare learners' implicit and explicit knowledge about connectives. In one of them, Zufferey et al. (2015) specifically focused on the role of L1 transfer for learners' ability to integrate connectives' meaning in a second language. In their study, they used eye-tracking to measure the way native English speakers, as well as French-speaking and Dutch-speaking learners of English process sentences containing either an appropriate or an inappropriate use of connective. They included two misuses, each specific to one population of learners, and attributable to negative L1 transfer. In the case of Dutch learners, it was the misuse of *when* to convey a conditional instead of a temporal meaning, as in (1). In the case of French, it was the misuse of *if* in contrastive sentences, as in (2).

(1) The kids don't look tired today. When they don't sleep now, we can go out for a walk.

(2) Admission policies are variable across universities. If in some of them all students can enroll, in others there is an entrance examination.

[from Zufferey et al., 2015: 390]

By comparing the way participants read the same sentences with a correct and an incorrect connective, they were able to assess whether learners intuitively reacted to the mistake, by slowing down their

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reading and going back to previous portions of the text for checking. Results from the eye-tracking study revealed that advanced learners intuitively spot the incoherence created by a misused connective, even when it corresponds to a possible use in their L1. In fact, the analysis revealed no difference between learners and native speakers on this task. The second part of the study consisted of a judgment task containing a selection of the same sentences. Learners were asked to judge if every sentence was correct or incorrect, and to circle the mistakes they had spotted. This time, learners had great difficulty in spotting the misuses linked to their L1 (but not other misuses), showing a clear negative transfer effect. It appears therefore that their intuitive knowledge did not translate into an ability to formulate usage rules, and learners therefore resorted to the rules of their L1 when performing a task requiring explicit knowledge, creating negative transfer effects.

Other online studies that have used the technology of self-paced reading (see Chapter 6) have also investigated the ability of learners to read coherent and incoherent sentences. Across two experiments, Wetzel, Zufferey and Gygax (2022) investigated whether German-speaking learners of French are able to detect the loss of coherence in the communication of causal and concessive relations. These two relations were chosen because of a major difference between them: while causal relations can be conveyed implicitly without loss of coherence, concessive relations need to be marked explicitly. Yet, contrary to native speakers, learners were not sensitive to this loss of coherence. But like native speakers, they read concessive relations more slowly than causal ones, indicating that the cognitive complexity of relations is a factor affecting reading in both L1 and L2 (see also Recio Fernández (2020) for a similar result in Spanish). In a second experiment, they rendered half of the sentences incoherent by using an inappropriate connective: the causal connective *donc* (similar to the English *so*) in concessive relations and the concessive connective *mais* (similar to *but*) in causal ones. This time, L2 readers reacted to the incoherence, but they did so later on in the sentence and this effect did not last as long as for native readers. Overall, L2 readers appear to be less sensitive to the information provided by connectives during discourse processing, as incoherence does not disrupt processing to a similar extent as for native speakers.

Another question is whether learners are able to integrate the various meanings of polyfunctional connectives (see Chapter 3). In order to test this, Zufferey and Gygax (2017) assessed the online processing and offline judgments of native French speakers and German-speaking learners for the French connective *en effet*. According to the Lexconn dictionary of connectives (Roze, Danlos & Muller, 2012), *en effet* can

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either convey a relation of cause (3) or of confirmation (4) (similar to the English *indeed*) depending on context. Just like concessive relations, confirmation relations cannot be conveyed implicitly without disrupting reading for native speakers (Zufferey & Gygax, 2016).

(3) Susanne ne fait manifestement pas attention à ses affaires. En effet, elle a oublié son portefeuille dans le bus.
'Susanne is obviously careless with her belongings, for/because she forgot her purse in the bus'.

(4) Susanne avait l'impression qu'il lui manquait quelque chose. Et en effet, elle a oublié son portefeuille dans le bus.

(5) 'Susanne felt she had lost something. And indeed, she forgot her purse in the bus'.

[from Zufferey & Gygax, 2017: 4]

In a self-paced reading experiment, they assessed whether learners were also sensitive to the loss of coherence provoked by implicit confirmation relations, and found that this was not the case. In a judgment task, they asked participants to assess the coherence of explicit and implicit causal and consequence relations, either conveyed by *en effet* or implicitly. Contrary to native speakers, learners judged implicit relations as more coherent for both causal and confirmation relations. This leads to the conclusion that they do not master any of the two functions of this polyfunctional connective, despite its high frequency in French (Zufferey & Gygax, 2020a).

So far, we have explored learners' understanding of relations between discourse segments made of whole clauses. In some cases, relations can be clause-internal, as for example in the case of specification relations in (5).

(5) The woman, that is, my old neighbor from above, is nice.

[from Wetzel, Crible & Zufferey, 2022: 207]

Wetzel, Crible and Zufferey (2022) assessed learners' ability to understand specification relations. From a syntactic perspective, they should be easier to process because they do not require conjoining two different clauses. From a discourse perspective, the signaling of these relations by a connective is usually optional, but different preferences for explicit marking are also observed between languages. Using corpus data, the authors found that in German these relations are often conveyed by the connective *also*, whereas in French they are mostly implicit. Yet, due to the similarity between *also* and the French

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connective *alors* (similar to *so*), they hypothesized that learners might erroneously believe that the two connectives have the same functions, due to negative transfer. They assessed this hypothesis in a self-paced reading task and a judgment task. In the judgment task, learners did reject the specifications containing *alors* as incorrect, but they did not judge as correct the explicit version of specifications with *c'est-à-dire* in French to a similar extent as native speakers, indicating that they were not sure how to express this relation explicitly. In the self-paced reading task however, they did not react to the incorrect uses of *alors* in specifications, contrary to native readers. This seems to indicate that even though they explicitly learned that *alors* cannot be used in specification relations in French, they do not use this knowledge during reading. In sum, as in the study by Zufferey et al. (2015), this study shows a discrepancy between learners' explicit and implicit knowledge. However, learners' competences are different in both cases: Zufferey et al. (2015) found evidence of implicit knowledge of connectives in the absence on an explicit ability to judge the same sentences, whereas Wetzel et al. (2022) reported that learners had the ability to reject incorrect uses of *alors* in a judgment task but did not react to it intuitively while reading. More research is still needed to determine why sometimes learners' explicit knowledge is better than their implicit knowledge, while in other cases it is the other way around.

Finally, in addition to connectives, discourse relations can be conveyed by an array of other syntactic, lexical or even graphical means. Across three self-paced reading experiments, Crible, Wetzel and Zufferey (2021) assessed the usefulness of parallel structures as in (6) for English-speaking learners' understanding of contrastive relations in French.

(6) Lucas s'intéresse aux films réalistes. En revanche, Kévin s'intéresse à la science-fiction.
'Lucas watches many realistic movies. By contrast, Kevin is interested in science fiction.'
[from Crible, Wetzel & Zufferey, 2022: 6]

They report that when the connective used is one that learners have mastered well (in that case *par contre*), learners rely mostly on the connective to understand the relation and the parallel structure does not add anything, whereas it is useful when the relation is implicit. In addition, when the connective is less familiar because it is mostly bound to the written mode (*en revanche*), the usefulness of parallelism becomes more apparent, as it helps participants read contrastive relations more quickly. However, contrary to native speakers, when the

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connective used is underspecified for a contrastive relation (*and*) and requires an inference in order to build the contrastive relation, learners fail to use the clue provided by parallel syntactic structures. It seems therefore that they remain at the level of explicit meaning, and do not extend it by inference the way native readers do.

Even though they are still scarce compared to corpus studies, experimental studies presented in this section tend to indicate that learners have some understanding of connectives. However, even at an advanced level of acquisition, their mastery is not equal to that of native speakers. Learners have difficulties in particular with connectives from a higher register, polyfunctional connectives, and often fail to detect incoherence during online reading, probably due to the great burden of reading in a second language. This effect was particularly apparent in self-paced reading experiments, because this methodology places a higher cognitive load on readers compared to eye-tracking.

In a nutshell, connectives remain difficult for learners even at advanced stages of language acquisition. Yet, it is also clear that these difficulties do not affect all learners to a similar extent. We now present these individual differences and discuss the factors that could explain them.

## 9.4 INDIVIDUAL DIFFERENCES IN LEARNERS' MASTERY OF CONNECTIVES

The range of individual variation during second language learning is wide for all aspects of linguistic competences (e.g., Dewaele, 2009; Zafar & Meenakshi, 2012). In the case of connectives, the offline comprehension study by Steffani and Nippold (1997) offers a good illustration. In their writing task, in which learners had to provide an appropriate continuation after a connective typical of the written mode, they find that the range of correct responses (out of 10) was 1–9, whereas it only varied between 8 and 10 for native speakers. Similarly, in the reading task involving the insertion of a connective from a list inside a short text, the range of scores (out of 30) was 15–30, against 23–30 for native speakers. This means that even between college students, a portion of learners get perfect scores on connective tasks, while others still struggle quite a lot. What could the factors explaining these important variations be?

One obvious candidate that has often been discussed in the literature is learners' overall proficiency level in the second language. For example, Cho and Shin (2014) gather data from three different

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proficiency levels of Korean learners in their corpus data, and found that the overuse of connectives diminishes as proficiency increases, but does not disappear completely. In a spoken production task, Ozono and Ito (2003) also found that Japanese learners with a higher proficiency level were better able to choose an appropriate connective in a reading task and were not affected by the type of discourse relation, contrary to learners with a lower level. Also using an experimental setting, Geva (1992) found that more advanced learners had a better ability to understand connectives in an extended discourse context.

Learners' level of proficiency is also correlated with the number of connectives that they use. Leedham and Cai (2013) report for example that the tendency to resort to a small lexicon of "teddy bear" words, that is, words they feel comfortable using, diminishes with proficiency. Chen (2014) also compared two proficiency levels of Chinese learners (intermediate and advanced) and found that the tendency to limit their use of connectives to a small set of items diminished as proficiency increased. However, advanced students in this study also tended to use a more informal style, thus learners' inability to select connectives from an appropriately formal register was not solved. Focusing on the connective *on the other hand*, Tazegül (2015) found that contrary to secondary or high-school learners, doctoral students do not misuse this connective, but they still tend to overuse it compared to native speakers. This indicates again that part of the problem disappears as proficiency increases, even though learners do not engage in a fully native-like usage of connectives. Yang and Sun (2012) also compared the use of connectives in corpus data by Chinese learners in the second and fourth year of undergraduate studies, and found that their ability to use connectives significantly increased. However, they also report that correct uses of connectives were correlated with writing quality, irrespective of the learners' proficiency level. This means that other factors affecting writing quality might be at play.

One of the factors that correlates with writing quality is the amount of exposure that learners have had to written genres, otherwise known as the degree of exposure to print. People's exposure to print is often measured using the Author Recognition Test (Stanovich & West, 1989). In this task, participants see a list of author names (some real and some fake) and have to check a box next to all the names that they recognize as belonging to authors. This task has been found to correlate with a number of linguistic competences in participants' first language, such as a better sentence processing ability (Acheson, Wells & MacDonald, 2008), a better vocabulary and world knowledge (Stanovich, West & Harrison, 1995) as well as better spelling skills (Stanovich & West,

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1989). Exposure to print in a speaker's mother tongue is also a good predictor of their reading comprehension and writing in L2 (Sparks et al., 2012). In the case of connectives, Wetzel, Zufferey and Gygax (2020) found that the ability of German-speaking learners of French to handle French connectives was correlated with their degree of exposure to print in German. The authors explain this correlation by a "linguistic coding difference hypothesis" (Sparks et al., 2006) stating that the acquisition of a second language is rooted in the competences in the first language, allowing learners to transfer competences from one language to the other.

Other studies have underlined the role of more specific linguistic competences as being good predictors of the mastery of connectives for children from a minority language background attending school in a second language. For instance, Crosson, Lesaux and Martiniello (2008) found for fourth-grade students from a Spanish-speaking background in the United States that knowledge of connectives is correlated with vocabulary knowledge and listening comprehension. In a study of children with Dutch as their first or second language, van den Bosch, Segers and Verhoeven (2018) found that syntactic knowledge is correlated with the ability to process causal relations during reading. Research conducted with adult learners has revealed that competence with connectives is correlated with strong L2 oral language proficiency (Geva, 1992).

Other factors of individual differences linked to second language competence that are related to learners' personality such as motivation and language learning aptitude (Ortega, 2008) have not been tested yet in relation to the level of competence with connectives.

## 9.5 WHAT COULD CAUSE LEARNERS' DIFFICULTIES WITH CONNECTIVES?

So far, we have listed learners' numerous difficulties with connectives, and underlined the existence of variations between learners depending on their level of proficiency and their degree of exposure to print. Yet, we have still not discussed why connectives are particularly difficult for learners. This is the topic of this section.

A major cause for difficulties with connectives that has been repeatedly pointed out in the literature comes from the fact that these items are prone to create negative transfer effects. This hypothesis stems from the observation that even though most languages have connectives, the way they are used can differ in important ways, even between closely related languages. In fact, it is difficult to find exact translation

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pairs (see Chapter 7). Transfer effects from the learners' first language can produce various types of phenomena in L2 productions (Ortega, 2008). They can lead to misuses, but also to overuses and avoidance patterns.

In the case of quantitative problems, Tapper hypothesized that the overall greater use of connectives by Swedish learners compared to native speakers of English could be due to stylistic transfer, as it has been observed that connectives are used more frequently in Swedish than English in corpus data (Altenberg, 1999). Cases of misuse come from more specific confusions between linguistic items. For instance, Granger and Tyson (1996) attribute the overuse of *indeed* in English by native French speakers to the frequent use of the French connective *en effet*. They also attribute the frequent misuse of *on the contrary* by French learners to transfer from the seemingly similar French connective *au contraire*. Similarly, Hamed (2014) attributes the frequent misuses of *and* by Libyan learners to transfers from the Arabic connective *wa* that can also take a continuative function not similarly marked in English. Kanno (1989) specifically attributes the misuse of causal connectives by Japanese speakers to transfer, whereas cases of overuses of additive connectives (strongly linked to the connective *and*) are attributed to an appropriate spoken style. Lee (2013: 86) attributes Korean learners' difficulties with contrastive connectives in English to the "lack of one-to-one correspondence between these Korean and English connectives". The role of L1 transfer between linguistic items was also confirmed in several experimental studies, showing that it can lead to incorrect judgments (Zufferey et al., 2015) or to an inability to intuitively detect incoherence during reading (Wetzel, Crible & Zufferey, 2022).

However, L1 transfer is not the only explanation, nor does it always seem to be corroborated by the data. For example, Granger and Tyson note that French-speaking learners overuse corroborative connectives like *actually*, *of course*, and *indeed*. While the overuse of *indeed* was likely due to negative transfer, it is not clear that this is the case for the other two connectives. In fact, the authors note that these connectives are overused to a similar extent by German-speaking learners in the ICLE corpus. In addition, Tapper (2005: 124) found a similar trend in Swedish learners, and concluded that it might be a "shared learner feature". From a study with Chinese-speaking learners, Zhang (2014: 124) also concludes that "direct language transfer [. . .] in their first language seems to be the least important [factor]. Developmental problems, which are more universally shared, appear to be far more important".

The question is, therefore, why the interlanguage of learners does not enable them to use connectives appropriately and understand all of

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them for a long time during the acquisition process? There are several factors that can be called upon to sketch an explanation. First, connectives often link several sentences or sometimes even paragraphs in textual contexts. They therefore require a high processing capacity, whereas learners often experience planning and structuring limitations when writing in L2 (Ellis, 1994). In addition, many connectives belong to a high register and are bound to the written mode (Crible & Cuenca, 2017), whereas learners typically use a more informal style or "oral tone" compared to native speakers (Field & Yip, 1992; Cobb, 2003; Lee & Chen, 2009). In addition, in Indo-European languages, the repertoire of connectives is usually very big (see Chapter 7), whereas learners tend to limit themselves to a small number of "lexical teddy bears" (Hasselgren, 1994: 237), in others words lexical items that they know well and feel comfortable using, and this likely limits the range of connectives that they spontaneously use (Leedham & Cai, 2013; Wetzel, Zufferey & Gygax, 2020).

In addition to the limitations linked to the second language learning process, there are also reasons linked to connectives themselves that render this functional category particularly difficult to master. One aspect of this difficulty comes from their frequent polyfunctionality (see Chapter 3) which implies the need to make complex form–function mappings. This seems to be problematic for learners, even for very frequent connectives (Zufferey & Gygax, 2017). Another difficulty is that connectives can also be underspecified, and convey an array of different relations in context. For example, the connective *and* can, in addition to its additive meaning, convey a relation of cause, temporality or contrast. In fact, in speech, this connective has as many as eleven different functions (Crible & Cuenca, 2017). Yet, it seems that learners only integrate their encoded meaning and do not make additional inferences in context (Crible et al. 2021).

Another aspect of this difficulty comes from the fact that using connectives appropriately does not only imply understanding their different functions, but also integrating their syntactic, graphic and register restrictions. All this is again problematic for learners. For example, Yoon and Yoo (2011) provide evidence that Korean learners of English often use coordinating conjunctions in the sentence-initial position in inappropriate grammatical contexts, and also use more sentence fragments than natives. In addition, they add inappropriate punctuation marks after coordinating conjunctions or omit necessary ones. Another aspect is that many connectives are specifically used in a given register, yet several studies have reported that learners use connectives from an inappropriate register, mostly relying on informal

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ones with an oral tone (Field & Yip, 1992; Granger & Tyson, 1996). One final area of difficulty is related to discourse relations themselves, and more specifically to the necessity to grasp when a relation can be left implicit and when a connective is needed to ensure coherence. As Zamel (1984: 116) notes: "learning when not to use them [connectives] is as important as learning when to do so". Yet, learners do not detect the incoherence of some implicit relations like concessions during reading (Wetzel, Crible & Zufferey, 2022).

Learners' difficulties with connectives are rendered more acute due to the fact that they are inappropriately taught. For example, Zamel (1984) notes that these problems may in part occur because learners are often only taught how to use connectives by function, with a list of different connectives for each of them, without indications about their differences. Crewe (1990) also reports that several textbooks misleadingly present lists of connectives as simple alternatives to convey a given relation. These lists are also accompanied by exercises encouraging learners to pick a list of connectives from several possibilities, thus reinforcing the impression that whole lists of connectives can be equivalent. Hamed (2014) also remarks that some misuses of connectives by Libyan students might be attributable to inappropriate teaching techniques, because in both secondary and tertiary education the focus is placed on grammatical teaching of isolated sentences, rather than on learning the connectives' functions in a larger context. Cho and Shin (2014) observe that other cohesive devices such as alternative signals are not taught in Korean textbooks for English as a second language, leading to the overuse of a limited range of connectives, observed in many corpus studies (for Korean, see Lee, 2013). Finally, Leedham and Cai (2013) also attribute some Chinese learners' difficulties with connectives to inappropriate teaching techniques. Connectives are often presented as lists, exercises mostly illustrate isolated sentences, and examples of usage very often contain connectives in the sentence-initial position. Several authors have suggested alternative teaching techniques to improve learners' knowledge of connectives. We discuss them in the next section.

## 9.6 SUGGESTIONS OF TEACHING TECHNIQUES

Several authors have provided alternative ideas to teach connectives more effectively in a second language. Zamel (1984) suggests starting by teaching connectives as grammatical categories (coordinating conjunctions, subordinating conjunctions, etc.) so that learners integrate

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how each category can be used within the sentence or between sentences. Starting from a grammatical perspective also allows teachers to present the correct punctuation that needs to be used, as these marks are elicited by grammatical structures. Of course, it is not enough to focus on grammar, and learners must also be taught that each connective has a specific role within the lexicon of a language, going back to Saussure's (2011) definition of meaning as essentially differential. Zamel suggests a number of exercises that can be used to achieve this objective. For example, asking learners to fill in the appropriate subordinating conjunction at the beginning of sentences to achieve a coherent link depending on the related segments. A possibility is to insert the subordinate clauses and ask learners to provide an appropriate continuation. Another exercise is to present pairs of sentences, ask learners to identify which of them require a connective, and to insert the appropriate one. Teachers can also give learners pairs of sentences and ask them to join them by any connective they find appropriate. This exercise can later on be used to discuss in class the different meanings created by using either *moreover* or *therefore* for example. Finally, an option is to use more extensive discourse contexts and ask learners to order scrambled sentences. All these exercises are meant to draw learners' attention to the unique features of each connective, rather than present them as interchangeable lists.

Crewe (1990) also discusses three compatible pedagogical approaches that can be used successively during the acquisition process to increase learners' awareness of the textual meanings of connectives. The first one is a reductionist approach consisting of forcing learners to use only a small subset of connectives, in order to help them become sensitive to the differences between them. The second one is an expansionist phase, during which learners should be encouraged to augment their initial list of connectives with alternative lexicalizations or paraphrases rendering the coherence link more transparent, such as *this is the reason why*, *for this purpose* or *a different view is*. These two steps still focus mostly on the words themselves, whereas the third one aims at including the whole discourse context. The principle consists of asking students, before they start writing, to explicate the logical transitions that they envision between the arguments they want to present. Once this is clarified, students will be better able to choose an appropriate connective from a more extensive list. One final piece of advice is to ask students to write a first draft of their text without connectives, and only add them (or ask another student to add them) in places where they feel the argument is unclear if it is left implicit, in order to avoid the overuse of connectives often observed in corpus data.

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Granger and Tyson (1996) also note that students should be made aware that connectives are not mere "stylistic enhancers" but act as links between discourse units. When analyzing authentic texts, emphasis should be placed on the way connectives are used in their role for coherence. Teachers should also place more emphasis on questions of style in order to help learners avoid using connectives from an inappropriate register.

In short, all these methods provide interesting ideas to improve the teaching of connectives that can easily be applied in a classroom context. However, their efficiency should be assessed experimentally before clear recommendations can be made.

## 9.7 SUMMARY

In this chapter, we have focused on the way second language learners use and understand connectives. We saw that learners experience many difficulties when using connectives in their textual productions, ranging from the use of connectives conveying an inappropriate meaning in context, syntactic errors due to incorrect placements within the sentence, and the use of connectives from an inappropriate (mostly informal) register. Even when connectives are not misused, learners also inappropriately use connectives from a quantitative perspective, by overusing some of them that they feel confident with (their lexical teddy bears) while avoiding others. These production difficulties are partially reflected in limitations found in comprehension studies. While controlled experiments have found that advanced learners are able to understand frequent connectives used in spoken language, they score lower than native speakers with formal connectives from the written mode. In addition, they often fail to detect the loss of coherence created by the use of inappropriate connectives or the lack of connectives in contexts that require them.

The chapter then discussed the reasons why learners have so many difficulties with connectives, emphasizing the role of negative transfer effects and processing limitations in a second language, but also the high demands related to the nature of connectives themselves, as elements that are the crossroad of lexical, syntactic and discourse knowledge. The role of inappropriate teaching methods has also been emphasized. Another important observation was the wide range of individual variations between learners in their ability to use and understand connectives. These variations have so far been linked to learners' proficiency level, degree of exposure to print in their first language, as

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well as syntactic and vocabulary level in their second language. We concluded with some suggestions to improve the teaching of connectives.

## DISCUSSION POINTS

- What are the causes for learners' difficulties with connectives?
- What is the role of linguistic proficiency for learners' ability to use connectives?
- Think of your own foreign language learning experience. Were connectives taught at all in your curriculum, and if so, how? Do you think that teaching helped you to use connectives effectively?

## FURTHER READING

The corpus study by Granger and Tyson (1996) is a very good illustration of all the problems encountered by learners, and the way they can be analyzed using a quantitative corpus-based approach. The comprehension study by Zufferey et al. (2015) compares two groups of learners and compares explicit and implicit knowledge. To learn more about transfer as a general phenomenon in second language acquisition, see Odlin (2022). The notions of explicit and implicit learning in the context of second language acquisition are clearly presented in VanPatten and Smith (2022). Wetzel, Zufferey and Gygax (2020) assess several factors of individual differences in learners' competence with connectives. To find out more about individual differences in second language acquisition, see Ortega (2008). The problems of inappropriate teaching techniques, and the methods that can be used to improve them are described in Crewe (1990).

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