Growing Anticipatory Connections during Online Processing: The Use of Grammatical Gender Cues in L2 French

A. Kate Miller

1. Introduction

The real-time processing of linguistic input involves the rapid integration of many types of information, including various linguistic (e.g., syntactic, morphological, prosodic) and nonlinguistic cues (e.g., real-world knowledge, lexical frequency) that can be used to predict upcoming information. Processing seems facilitated when expectations are met but inhibited when they are not (e.g., DeLong, Urbach, & Kutas, 2005; Lew-Williams & Fernald, 2007; Martin, Thierry, Kuipers, Boutonnet, Bastien, Foucart, & Costa, 2103; Van Berkum, Brown, Zwisterlood, Kooijman, & Hagoort, 2005; Wicha, Moreno, & Kutas, 2004). Despite the occasional failed prediction, proactive comprehension is argued to be fundamental to the human language processing system (e.g., Federmeier, 2007; Pickering & Garrod, 2007, 2013), contributing to the efficiency with which linguistic input is comprehended in real time (e.g., Kuperberg, 2013; Kuperberg & Jaeger, 2016; Van Petten & Luka, 2012). Furthermore, prediction in language processing seems to play an important role in language acquisition (e.g., Chang, Dell, & Bock, 2006; Fodor, 1998).

In experimental studies examining anticipation in sentence processing, native speakers (NSs) have demonstrated effective use of various information sources to anticipate upcoming content (e.g., Dahan, Swingley, Tanenhaus, & Magnuson, 2000; DeLong et al., 2005; Federmeier, 2007). In contrast, research on predictive processing in a second language (L2) suggests that non-native speakers may not reliably be able to exploit the same types of information in the same ways (e.g., Lew-Williams & Fernald, 2010; Grüter, Lew-Williams, & Fernald, 2012; Martin et al., 2103; see Kaan, 2014, for a review). This has led Grüter, Rohde, and Shafer (2014) to suggest that L2 learners experience a reduced ability to generate expectations (RAGE) in real time. Of course, L2 processing has been argued to differ from native or first language (L1) processing in other ways, both quantitative—the deployment of processing mechanisms seems delayed in L2 (e.g., Boxell & Felser, 2017; Dekydtspotter, Schwartz, & Sprouse, 2006), and cognitive resources are allocated to the various components of real-time processing in different ways (e.g., Hopp, 2010; McDonald, 2006)—and qualitative—L2 processing seems to rely less on structural information, prioritizing non-structural information (see Clahsen & Felser, 2017, for an overview and update of their Shallow Structure Hypothesis). Weakly activated L2 lexical representations may also contribute to L1-L2 processing differences (Dekydtspotter & Miller, 2013).

The current study uses eye-tracking to investigate the relationship between anticipation and processing speed (Foucart, Martin, Moreno, & Costa, 2014; Wlotko & Federmeier, 2015) in L2 sentence processing, specifically, in the use of cues to the grammatical gender of an upcoming noun among classroom L2 learners of French. Whereas NSs can use grammatical gender information (encoded, for example, in masculine or feminine determiner forms) to anticipate upcoming nouns, adult L2 learners seem less sensitive to this grammatical gender information (e.g., Lew-Williams & Fernald, 2010; Grüter et al., 2012), although this has been shown to vary with proficiency or with congruency between L1 and L2 gender systems (Dussias, Kroff, Guzzardo Tamargo, & Gerfen, 2013; Hopp & Lemmerth, 2016). Given that online processing is slower and more effortful in a L2 (e.g., McDonald, 2006), and that processing speed can affect anticipation during sentence processing (Wlotko & Federmeier, 2015), it could be the case that even lower proficiency L2 learners would be able to use grammatical gender information if they had more time to generate an expectation (Foucart et al., 2014). The current study

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uses a sentence structure with clitic pronoun doubling (see Anagnostopoulou, 2006, for a review of clitic doubling in Romance languages), which provides an additional cue to gender earlier on in the sentence.

2. Background

Grammatical gender has been the focus of much research in L2 acquisition, in various domains. Full mastery of an L2 gender system seems rare even among highly advanced learners, and especially for those whose L1s lack grammatical gender. Gender errors in L2 production have sometimes been cast as performance rather than competence errors (e.g., Prévost & White, 2000), or framed in terms of capacity constraints (e.g., Gillon Dowens, Vergara, Barber, & Carreiras, 2010; Keating, 2009, 2010), although some research suggests more fundamentally deficient underlying systems due to age-related acquisition constraints (e.g., Hawkins, 2009). Grüter et al. (2012) followed Lew-Williams and Fernald (2010) in suggesting that the lexical representations of grammatical gender are different in NSs and L2 learners due to differences across L1 and L2 learning conditions. Grammatical gender is of particular interest in research on predictive L2 sentence processing because it is an easily targeted morphosyntactic cue, and one that has yielded robust results in NSs (e.g., Dahan et al., 2000; Lew-Williams & Fernald, 2010). Even young children have been shown to use gender information in anticipatory ways (Lew-Williams & Fernald, 2007). Sensitivity to grammatical gender information is often investigated through the use of electroencephalography or eye tracking. In eye-tracking studies within the visual world paradigm, participants react to auditory stimuli by looking at images on a computer display. For example, while looking at a screen showing pictures of a chair and a table, a participant will hear a simple sentence like Look at the chair, and will shift their gaze to the chair. To test anticipatory effects informed by grammatical gender, the gender of the two objects is manipulated. In French, for example, the feminine noun chaise “chair” could be paired with masculine noun bureau “desk.” In this context, with objects of different genders, the feminine form of the definite article la provides a grammatical cue as to which noun will be named, given that feminine la “the” is incompatible with masculine bureau “desk.” Thus, participants can use the gender information to identify the target object more quickly than if the two objects were of the same gender, as in chaise “chair” and table “table.” In this case, the feminine definite article la could introduce either noun, and only hearing the noun itself would indicate where participants should look.

Many experiments in this paradigm (with some variation) have probed for anticipation linked to grammatical gender among L2 learners, with mixed results. Whereas some results suggest that adult L2 learners do not use such grammatical gender information to anticipate upcoming nouns (e.g., Lew-Williams & Fernald, 2010; Grüter et al., 2012), other studies have shown successful anticipation among L2 learners under specific conditions: For example, Fowler and Jackson (2017) found that providing multiple cues to grammatical gender boosted predictive processing among L2 learners of German. Dussias et al. (2013) considered the role of L1 influence and L2 proficiency, testing two groups of L2 Spanish learners, with either Italian (a language with grammatical gender) or English (no grammatical gender) as their L1. The L1 Italian group showed partial anticipation effects, for feminine nouns only (i.e., the so-called marked gender). The L1 English group results were modulated by proficiency, with only the more advanced learners showing evidence of gender anticipation. Hopp and Lemmerth (2016) similarly found that predictive gender processing could vary with proficiency. This study considered the interaction of lexical and syntactic congruency, testing L1 Russian-L2 German learners. High intermediate learners exhibited anticipatory effects when the gender of target objects was the same in the two languages (lexical congruency), and when the gender was marked through adjective inflection, which occurs in both languages (syntactic congruency).

In light of studies like these demonstrating that, in some cases, L2 learners are indeed able to use grammatical gender information to anticipate upcoming nouns, Kaan (2014) rejected the notion that L2 learners are unable to generate expectations during online processing, suggesting instead that “native speakers and L2 learners do not differ in the nature of the predictive mechanisms or in the way these mechanisms are employed, but in what drives those mechanisms” (p. 260). One likely factor driving these mechanisms could be processing speed. Wlotko and Federmeier (2015) considered the interplay between processing speed and predictive sentence processing among NSs of English. Their study examined event-related potentials in response to unexpected words in high constraint sentence contexts, manipulating the presentation speed of visual material. While participants failed to show evidence of
prediction-driven comprehension (as measured by an N400 response to an unexpected word) with a fast 250ms stimulus onset asynchrony, an anticipatory response did emerge, among these same participants, at a slower stimulus onset asynchrony of 500ms. These results suggest that the faster presentation speed did not allow enough time to generate expectations about upcoming content. Perhaps, as the authors noted, the speeded presentation yielded increased comprehension difficulty, requiring the use of cognitive resources that would otherwise be devoted to predictive mechanisms.

This argument echoes capacity constraint assertions made in reference to the debate on the level of structural detail involved in L2 sentence processing: The underlying mechanisms are the same, and the observable differences produced in some experimental settings actually reflect other factors that obscure evidence for detailed syntactic processing (e.g., Dekydtspotter & Miller, 2013; Hopp, 2016, 2017; Miller, 2014). The same could well be true of predictive processing mechanisms in L2. Indeed, Foucart et al. (2014) discussed the timing of anticipatory mechanisms within the context of bilingual sentence processing, noting that “In difficult sentence processing situations, anticipation processes may not be fast enough to keep pace with the speed with which a sentence unfolds. Thus, given that L2 processing may entail a delay…the ability to anticipate linguistic information, such as words and their features, might be reduced” (p. 1462). It might be more the capacity, rather than the ability, to anticipate that is affected. If anticipation is indeed part of the universal architecture of human language processing, then both NSs and L2 learners alike should have this ability. Where non-native participants of previous studies have sometimes failed to show robust evidence of anticipation, perhaps this is not because they are less able to generate predictions but simply because in the context of these experiments, their cognitive resources were overtaxed, or their processing was delayed, and they were unable to form predictions within the allotted time. In many of the previous studies targeting grammatical gender, the morphosyntactic cue(s) immediately preceded the noun in sentences like Where is the (ADJ) NOUN? or Find the NOUN. A small processing lag would render any anticipatory edge gained from the grammatical gender information moot, if the target noun was encountered almost immediately following the gender cue.

3. The current study

To explore the use of grammatical gender information in the anticipation of upcoming linguistic input and the possible delay in generating expectations, the current study exploits the frequent use of clitic doubling in French to examine whether intermediate classroom learners will show sensitivity to grammatical gender if they are given multiple cues, including an early cue in the form of an object pronoun clitic, and more time to form predictions. Eye movements across visually presented stimuli were tracked as respondents listened to sentences as in (1), where the direct object clitic pronoun la “it-FEM” is co-referential with the feminine noun chaise “chair.” This type of construction is frequently encountered in spoken French (e.g, Anagnostopoulou, 2006).

(1) Vous la voyez, la jolie chaise?

[Do] You see it, the pretty chair?

In (1), gender information about the object referenced in the sentence is provided early on in the form of the object clitic pronoun la “it,” and then again by the definite article la “the.” A prenominal adjective, jolie “pretty,” intervenes between the article and the noun, extending the window in which participants can generate expectations based solely on grammatical gender information. Although the written form of the intervening adjective also conveys grammatical gender information (the final orthographic e), it should be noted that the spoken forms for the masculine and feminine are identical: /ʒɔli/. The grammatical gender information provided by the clitic pronoun la and the definite article la is only useful in contexts with a single feminine referent. Thus, eye movements for such contexts are compared with those in a control condition with two feminine referents (or two masculine referents). In the case of two same-gender referents, no expectations can be generated; only the noun itself will disambiguate the sentence.
3.1. Participants

The results from a group of 15 intermediate L1 English-L2 French learners are reported here. Participants were enrolled in a third-year “structure of French” course at the time of testing (early in the semester, during the third week of classes) and received extra credit in exchange for their participation. Roughly half of the students in this class had already taken at least one upper level French course. The other half of the students had just completed the second-year language course sequence the previous semester and were thus enrolled in an upper level class for the first time. Participants were thus divided into two proficiency groups: high intermediate ($n = 8$) and low intermediate ($n = 7$). Table 1 presents information about these two groups of participants, gathered through a background information questionnaire.

Table 1
Participant characteristics

<table>
<thead>
<tr>
<th>Group</th>
<th>Years of Study</th>
<th>Time abroad (in months)</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>High intermediate group ($n = 8$)</td>
<td>7</td>
<td>1.6</td>
<td>23.9</td>
</tr>
<tr>
<td>Mean</td>
<td>2.5-9.5</td>
<td>0-4</td>
<td>19-33</td>
</tr>
<tr>
<td>Range</td>
<td>3.5</td>
<td>1.5</td>
<td>5.3</td>
</tr>
<tr>
<td>Low intermediate group ($n = 7$)</td>
<td>4.5</td>
<td>1.2</td>
<td>20.1</td>
</tr>
<tr>
<td>Mean</td>
<td>2-7</td>
<td>0-4</td>
<td>19-26</td>
</tr>
<tr>
<td>Range</td>
<td>1.6</td>
<td>1.5</td>
<td>2.4</td>
</tr>
</tbody>
</table>

3.2. Materials and procedures

Participants were told that in the context of the experimental task, they were visiting the new home of some friends who were very excited to show them around. Thus, the sentences that participants heard during the task were part of the tour given by their enthusiastic hostess. Participants were asked to listen politely and to look at each object as it was pointed out to them. The experimental sequence is depicted in Figure 1: First, participants saw a screen with a fixation point $\times$ in the middle of the screen and two pictures of inanimate objects at each edge of the screen. Participants had four seconds to examine the pictures, identify the objects depicted, and access the corresponding lexical items. Next, the pictures disappeared, leaving only the $\times$ at the center of the screen. Participants heard a tone to remind them to focus on this fixation point. After two seconds, the pictures reappeared and the auditory stimulus began to play. As they listened, participants were to fixate on the object mentioned in the sentence as soon as possible. On the final screen, participants saw the object that had been named, and indicated whether they liked the object by fixating on $J'aime$ “I like [it]” at the top of the screen or $J'aime pas$ “I don’t like [it]” at the bottom of the screen. This last part of the sequence was included so that participants would stay more engaged with the experiment and give some sort of response beyond simply looking at the pictures. Then the sequence would start over with the next item.

The task included different-gender and same-gender trials. Figure 1 illustrates one of the different-gender trials. The other object depicted in this example is a telephone, which is grammatically masculine in French. Thus, the feminine clitic pronoun $la$ and the feminine definite article $la$ provide information that can inform expectations about upcoming material. In different-gender trials, participants can

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1The data from one additional participant whose L1 was not English and from two who had started learning French before the age of 12 were not included in the analysis.
presumably look to target objects more quickly than in same-gender trials, with two masculine or two feminine objects instead of one of each.

The target nouns used in the current study were all taken from the textbook used in first-year French courses at the university where testing took place. In the design phase of the experimental materials, accuracy in gender assignment for 82 potential nouns was verified through an online survey with intermediate-proficiency respondents \((n=41)\). The target nouns were chosen from among those with the highest accuracy rates of gender assignment (80-100%). Those that yielded lesser accuracy in gender assignment (60-79%) were used in distractor items. Tables 2-3 show the complete list of target nouns used in the main experimental task and their pairings in different-gender (Table 2) and same-gender trials (Table 3). Nouns were paired together based on semantic relatedness (within the context of the task, it was preferable to pair nouns that could be found in the same room of a house) and phonological difference (the onset of the word is enough to distinguish between the two competing nouns). All pictures appeared twice in the task, as both targets and distractors, and their positioning at the right or left edge of the computer screen was counterbalanced (e.g., Dussias et al., 2013).

There were 32 experimental items, 16 in the different-gender condition and 16 in the same-gender condition, and an additional 48 distractor items. In distractor items, the order within the sentence was reversed, as in La jolie chaise, vous la voyez? “The pretty chair, [do] you see it?” Items were split into two blocks with a short (60-second) break in between. Two versions of the task were created, with the order of the two blocks reversed, and the items manually randomized (with order determined by a random list generator) within each block. The experimental stimuli were read by a female NS of French. The carrier sentence was recorded as Vous le voyez, le joli truc? / Vous la voyez, la jolie chose? “You see it, the pretty thingy/thing?” The target nouns were recorded within the context of le/la joli(e) ____ , with question intonation. The target nouns were then spliced into the carrier phrase, replacing the
placeholder word *true* or *chose*, so that the acoustic duration of the clitic pronoun and the definite article were kept constant across test items. The same procedure was used to create the distractor items.

### Table 2
**Target nouns and distractors for different-gender trials**

<table>
<thead>
<tr>
<th>Target: feminine noun</th>
<th>Distractor: masculine noun</th>
<th>Target: masculine noun</th>
<th>Distractor: feminine noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>porte ‘door’</td>
<td>sac ‘bag’</td>
<td>frigo ‘fridge’</td>
<td>tarte ‘pie’</td>
</tr>
<tr>
<td>fenêtre ‘window’</td>
<td>placard ‘cabinet’</td>
<td>tapis ‘rug’</td>
<td>bouteille ‘bottle’</td>
</tr>
<tr>
<td>fourchette ‘fork’</td>
<td>champignon ‘mushroom’</td>
<td>chapeau ‘hat’</td>
<td>carotte ‘carrot’</td>
</tr>
<tr>
<td>plante ‘plant’</td>
<td>canapé ‘sofa’</td>
<td>couteau ‘knife’</td>
<td>pomme ‘apple’</td>
</tr>
<tr>
<td>serviette ‘towel’</td>
<td>miroir ‘mirror’</td>
<td>stylo ‘pen’</td>
<td>table ‘table’</td>
</tr>
<tr>
<td>lampe ‘lamp’</td>
<td>réveil ‘alarm clock’</td>
<td>rasoir ‘razor’</td>
<td>jupe ‘skirt’</td>
</tr>
<tr>
<td>chaise ‘chair’</td>
<td>téléphone ‘phone’</td>
<td>lit ‘bed’</td>
<td>télévision ‘television’</td>
</tr>
<tr>
<td>calculatrice ‘calculator’</td>
<td>livre ‘book’</td>
<td>bureau ‘desk’</td>
<td>carte ‘card’</td>
</tr>
</tbody>
</table>

### Table 3
**Target nouns and distractors for same-gender control trials**

<table>
<thead>
<tr>
<th>Target: feminine noun</th>
<th>Distractor: masculine noun</th>
<th>Target: masculine noun</th>
<th>Distractor: feminine noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>bouteille ‘bottle’</td>
<td>porte ‘door’</td>
<td>placard ‘cabinet’</td>
<td>frigo ‘fridge’</td>
</tr>
<tr>
<td>tarte ‘pie’</td>
<td>fenêtre ‘window’</td>
<td>sac ‘bag’</td>
<td>tapis ‘rug’</td>
</tr>
<tr>
<td>pomme ‘apple’</td>
<td>fourchette ‘fork’</td>
<td>canapé ‘sofa’</td>
<td>chapeau ‘hat’</td>
</tr>
<tr>
<td>carotte ‘carrot’</td>
<td>plante ‘plant’</td>
<td>champignon ‘mushroom’</td>
<td>couteau ‘knife’</td>
</tr>
<tr>
<td>jupe ‘skirt’</td>
<td>serviette ‘towel’</td>
<td>livre ‘book’</td>
<td>stylo ‘pen’</td>
</tr>
<tr>
<td>télévision ‘television’</td>
<td>lampe ‘lamp’</td>
<td>miroir ‘mirror’</td>
<td>rasoir ‘razor’</td>
</tr>
<tr>
<td>carte ‘card’</td>
<td>chaise ‘chair’</td>
<td>réveil ‘alarm clock’</td>
<td>lit ‘bed’</td>
</tr>
<tr>
<td>table ‘table’</td>
<td>calculatrice ‘calculator’</td>
<td>téléphone ‘phone’</td>
<td>bureau ‘desk’</td>
</tr>
</tbody>
</table>

### 3.3. Data analysis and predictions

In addition to the main experimental task, participants also completed a gender assignment survey (after the main task), in which they indicated whether they thought each of the target nouns was masculine or feminine. Overall, participants were accurate in this task, with scores ranging from 78-100%. This task was used to eliminate individual data points for any noun to which a participant assigned
erroneous gender on the debriefing task. The remaining data were cleaned of outliers more than two standard deviations from the mean within each condition, and missing values were replaced with the mean. A 2 (same- or different-gender trial) × 2 (low or high intermediate group) ANOVA was performed on the mean reaction times—that is, time to first fixation on the target object. Years of study and time spent abroad were included as covariates.

If these intermediate L2 learners, whose L1 English does not have grammatical gender, can nonetheless use this information to form expectations about upcoming linguistic input provided they have enough time to form such expectations, this should be manifested in shorter reaction times on different-gender trials, in which the grammatical gender information provides early cues to the object that will be named. This anticipatory advantage might be modulated by proficiency group.

4. Results

The ANOVA revealed a significant interaction between trial type and participant group, \( F(1, 11) = 12.544, p = .005 \), and a marginal effect of participant group, \( F(1, 11) = 3.502, p = .088 \). Figure 2 presents mean reaction times (time to first fixation on the target object) for each group on same- and different-gender trials. As can be seen in this figure, the low intermediate learners did not show any processing advantage due to the disambiguating gender information on different-gender trials. Their RTs were flat across the two conditions, \( t(6) = 0.711, p = .504 \). In contrast, the high intermediate group did exhibit faster response times on same-gender trials. Pairwise comparisons confirmed a statistically significant asymmetry in high intermediate learners’ reaction times, \( t(7) = 6.415, p < .001 \) suggesting an anticipatory advantage gained from the grammatical gender information.

5. Discussion

When disambiguating grammatical gender information was provided by the object pronoun clitic and the definite article in different-gender trials, participants in the high intermediate group looked to the target object more quickly than in same-gender trials, where this gender information could not be used to anticipate the upcoming noun. The low intermediate group, in contrast, did not show any
asymmetry in their reaction times across same- and different-gender trials. It should be noted that
reaction times on same-gender trials did not differ across groups: A one-way ANOVA revealed no
significant between-group difference, $F(1, 13) = 0.851, p = .373$, indicating similar speed in lexical
access to vocabulary items. Where the two groups differed was in their reaction times on different-
gender trials, $F(1, 13) = 10.852, p = .006$. It was only the high intermediate group participants who
seemed able to use grammatical gender information in predictive ways. This confirms the role of
proficiency in the successful deployment of anticipation mechanisms (Dussias et al., 2013; Hopp &
Lemmerth, 2016).

The timing of the high intermediate group results merits further scrutiny. Reaction times were
approximately 400ms shorter on different-gender trials when compared with same-gender trials. This
difference is much larger than the significant gender anticipation effects reported in Hopp and Lemmerth
(2016), which were around 200ms for NSs and slightly less for L2 participants, as well as the significant
differences reported in Dussias et al. (2013), which were less than 150ms for NSs and slightly above
150ms for advanced L2 learners. Although this asymmetry is indeed quite large, it would seem that
reaction times on different-gender trials could have been even faster, given that an indication of the
grammatical gender occurred very early in the sentence, at around 400ms. The mean reaction time in
this condition, however, was 1982ms. The response latency between gender cue and gaze shift was thus
longer than one and a half seconds—much longer than what has been reported in the literature. Previous
studies have reported response latencies closer to that of the high intermediate group of the current study
as measured from the presentation of the definite article at around 1400ms. Thus, it might seem that it
was the definite article that triggered an anticipatory gaze shift to the target object. Participants may have
used this second cue (i.e., the definite article) to confirm the gender information gleaned from the clitic,
and then looked to the object. Perhaps having two cues rendered the gender information more salient.
This interpretation is compatible with Fowler and Jackson’s (2017) finding that multiple cues to gender
yielded more robust anticipation compared with only a single cue.

The current study did not include a single-cue condition for comparison, which is but one of many
limitations of this preliminary work. One of the most notable limitations is the lack of NS control group.
It seems uncontroversial to imagine that NS participants would have shown evidence for predictive
processing, as in previous studies. However, the precise timing of these results, with respect to the early
cue in the clitic pronoun, would have been a useful background against which to interpret the learner
results. Additionally, L2 learner participants at more advanced and less proficient levels could also yield
some interesting and revelatory comparisons. Although the results of the current study are consistent
with proficiency effects in predictive processing, with only the more proficient participant group
showing the relevant asymmetries, the group division was not necessarily ideal. Proficiency does not
always align with course level, and a range of proficiency levels can be found within a single class.
Furthermore, this division resulted in small group sizes, another limitation of the current study. Despite
these limitations, the results of the current study suggest that (some) intermediate-level classroom
learners of French are sensitive to grammatical gender cues, and that they can use this information to
anticipate upcoming nouns, as has been shown for NSs and more advanced L2 learners of gendered
languages in previous research. These results seem promising and worth further investigation and further
teasing apart of the roles of timing and of multiple cues with a more developed stimulus and larger
participant groups representing different proficiency levels (determined by an independent measure of
proficiency, such as a c-test).

6. Conclusion

The current study considered the possible role of a L2 processing delay in the use of grammatical
gender information to anticipate upcoming sentence content. Participants’ eye movements were tracked
while they listened to sentences that indicated which of two objects they should look at. Grammatical
gender information was provided by a direct object clitic pronoun, which occurred early in critical items,
and by the definite article. A group of high intermediate L2 learners of French exhibited anticipatory
gaze shifts to target nouns in same-gender trials, in which grammatical gender information can be used
to predict. This finding adds to the current literature on the role of anticipation in L2 processing and the
debate over whether L2 learners can generate expectations in the same way that NSs do.
References


