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Final Thesis

Aspect Processing in Italian: An Eye-Tracking Study

Supervisor

Prof. Giulia Bencini

Assistant supervisor

Phd. Student, Martina Pucci

Graduand

Marta Giuseppucci
886013

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Abstract

The purpose of this thesis is to investigate the processing of imperfective and perfective aspect in Italian. The project is part of a larger cross-linguistic project on aspect in Russian, English and Spanish. Using a visual-world eye-tracking paradigm, the experiment aimed at investigating whether an image of an ongoing event picture is more likely to be associated with a sentence using imperfective aspect and conversely, whether a sentence using the perfective aspect is more likely to be associated with a completed event.

Thirty adult Italian native speakers with normal (or corrected to normal) eye vision were tested remotely via their own computers. The results showed that participants associated ongoing event pictures to the imperfect aspect soon after the offset of the verb, confirming our initial hypothesis. The results for the perfective aspect showed that participants' fixations converged on the completed event pictures only after the offset of the sentence, suggesting a more deliberate process answer.

A follow-up sentence elicitation experiment was conducted to determine whether the difficulty with the Italian perfective (*passato remoto*) is due to regional differences in the use of the perfect.

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1 Introduction

This chapter offers an overview of the concept of verb aspect, distinguishing morphological from lexical aspect and introducing the difference between perfective and imperfective aspect. The introduction moves on to defining aspect in Italian in order to present some basis prior to delve into the study on aspect processing in Italian. Lastly, as the aforementioned study is based on the study by Minor and colleagues (2023), an outline of that study is presented.

1.1 Verb aspect

The notion of *aspect* does not provide deictic information about the verb, so it must be distinguished from the verbal *tense*. Indeed, “tense relates the time of the situation referred to some other time, usually the moment of the speaking”, while “aspects are different ways of viewing the internal temporal constituency of a situation” (Comrie, 1976). Thus, aspect refers to the way an event is determined in relation to the tense. Aspect can be classified as morphological or lexical: when it is morphological, the aspect is identifiable through its morphological structure, while the lexical aspect is defined through the lexical components of the verb and the elements around it (Pozzo, 1995). Slavic languages have a morphological aspect, while other languages, like Italian, have lexical aspects.

Aspect can be distinguished between perfective and imperfective: a perfective form underlines a completed event, while an imperfective form underlines an ongoing event. Comrie (1976) explains this difference saying that “the perfective looks at the situation from outside, without necessarily distinguishing any of the internal structure of the situation, whereas the imperfective looks at the situation from inside [...]”.

The present study uses eye-tracking to examine the processing of perfective and imperfective aspect in Italian. The study is based on previous cross-linguistic research on aspect processing. (Minor et al., 2023).

1.2 Verb aspect in Italian

In Italian, aspectual information is available from verb tense. The main aspectual opposition is between *imperfetto* tense and *perfetto* tense. In Italian, the Imperfective aspect is usually expressed through the *imperfetto* tense, whereas the *passato remoto* expresses the Perfective aspect (Nowakowska, 2018).

Being subject to regional variations, Italian displays differences in the coding of both the *imperfetto* and *perfetto* tenses among its speakers, depending on whether they reside in the North, Centre, or South of Italy. Indeed, the *imperfetto* may be substituted by the *trapassato prossimo*, and the *passato remoto* may be substituted by the *passato prossimo* by speakers from the North of Italy. However, this study employs *imperfetto* and *perfetto* to avoid using composite verbs. Furthermore, the study adopts telic verbs, characterized by internal boundedness, and in a perfective form, entailing event culmination (Foppolo et al., 2021).

The two tenses are considered suitable for every Italian speaker for other reasons. Notably, the *passato remoto* among Southern Italian speakers collocates an event in their past, often serving as their preferred tense for recounting past experiences. Conversely, people from the Northern regions do not use this tense for narrating their own past experiences, opting instead for the *passato prossimo*. Nonetheless, they can recognize and accept the *passato remoto* when it describes an external event, as the speaker is acknowledging the fictional existence of a certain event. This form is referred to as an aoristic form, which identifies an event in itself, without providing a temporal location (Giorgi, 2016). On the other hand, the *imperfetto* is not indexical and it is aspect neutral, so it is both compatible with terminative and non-terminative readings, necessitating contextual anchoring for disambiguation. However, it is the predominant form in narrative contexts, serving for storytelling purposes (Giorgi 2018; Giorgi and Pianesi, 2001).

1.3 Aspect processing across Languages

The study by Minor and colleagues (2023) takes into consideration the aspectual differences between Russian, Spanish, and English and aims to investigate the variation among languages which possess strong perfectives (Martin and Gyarmathy, 2019) which entail event completion. The study addressed three research questions. The first asked whether speakers of Russian, Spanish, and English showed online preference for representations of ongoing events when they heard sentences involving verbs in an imperfective aspect. The second asked whether the same happened when the representations were of completed events and the sentences involved verbs in a perfective aspect. Lastly, the third investigated whether the preferences triggered by the perfective forms differed between the three languages.

To address these research questions, Minor and colleagues (2023) employed the Visual World Paradigm (VWP) with eye-tracking while listening and picture selection. This is a

methodology that has been increasingly used in language processing research, as it involves both auditory and visual stimuli. Notably, it has been observed that individuals often instinctively shift their gaze towards visual elements in their surroundings that are thematically connected to the spoken content they are hearing. This phenomenon points to an engaged real-time anticipation, which refers to the idea that listeners actively use visual cues to anticipate and facilitate their understanding of the spoken language as it unfolds (Cooper, 1974). Indeed, the VWP enables the examination of language processing through a moment-to-moment analysis by mapping the eye movements while language unfolds (Kamide, 2008; Altmann and Kamide, 2008; Foppolo, 2021).

Results from the study by Minor et al. (2023) differed by language. Russian-speaking participants showed a 98% preference for the ongoing event picture when the target sentence contained an imperfective verb and a 95% preference for the completed event picture for the target sentence containing a perfective verb. Accuracy is significantly above chance. Spanish-speaking participants showed a 97% preference for the ongoing event picture in the imperfective condition and an 84% preference for the completed event picture in the perfective condition. Since there was a significant difference between the results for the perfective condition in Russian and Spanish, the researchers underline that the reason can be found in the type of boundedness (e.g., event completion), which is explicitly signalled morphologically in Russian, whereas in Spanish it is not. This also motivates conducting research on other Romance languages.

Results from English-speaking participants are of 96% for imperfective condition, but only of 54% for the perfective condition. Moreover, accuracy was not above chance for the second condition. This result seems to support the idea that the English Simple Past is a non-aspectual tense, showing that it is used for narrating the progression of actions with dynamic verbs, but it lacks specificity regarding the concept of boundedness.

2. Aspect Processing in Italian

The experiment on aspect processing in Italian focused on investigating whether a picture showing an ongoing event is more likely to relate to a sentence using imperfective aspect and whether a picture showing a completed event is more likely to relate to a sentence using perfective aspect. In general, participants were expected to correctly associate the pictures to the sentences, showing no issues in coding both aspects. The association was measured through online measures, calculating the number of times that participants correctly associated (through looks) the target image to the sentence they were hearing and contrasting the number of looks between target and distractors. The looks to the target represented the dependent variables, in relation to the time from the onset of the verb (independent variable). Moreover, participants were asked from which region they came from, as we were expecting some discrepancies among the North, Centre and South of Italy, knowing that there are some differences in the use of past tenses among Italian speakers.

2.2 Method

2.2.1 Participants

Participants in the study were 30 adults between 21 and 81 years old (mean= 30) native speakers of Italian with a normal or corrected-to-normal vision. Participants were recruited through Facebook groups of Italians, through acquaintances of the researchers and students at the UiT. Participants were asked some background questions regarding which part of Italy they and their parents come from (North, Centre, South), in order to understand what verb-tense they were more familiar with (*passato remoto/ imperfetto; passato prossimo/ trapassato prossimo*). 90% of the participants were from the North of Italy and 10% from the Centre. Moreover, participants were asked if they were monolingual or multilingual and their proficiency level (self-assessed according to the CEFR; in reading, speaking, listening, and writing) in their second or third language. This additional information was asked in order to understand whether there were any differences among monolinguals or multilinguals and whether a second or third language could influence the results. However, this additional information was not taken into account later.

Table 1.

Participants' demographics overview.

Number	30
Mean age	30
Region of provenance	90% North; 10% Centre

2.2.2 Materials

The experiment involved 24 experimental items, which comprised both audio inputs and visual displays. The audio inputs were recorded by a native speaker of Italian in an audio-proof booth and later manipulated with Audacity. The audio stimuli were made of a preamble, shortly describing a scene in the past tense (*imperfetto*), which was useful to create context and provide anchoring (Giorgi and Pianesi, 2001). The text sentences had an SVO structure, where the verb was always a telic predicate, and the object was characterized by a postnominal adjective or a complement of specification. Each audio stimuli started 500ms after the beginning of each recording, so that every stimulus had approximately the same length and there was a homogeneous pause after the preamble.

Table 1.

Example of sentences used in the experiment.

(1) Era una fredda mattina d'inverno. (Preamble)
was a cold morning of winter
“It was a cold winter morning”.
a. Il nonno faceva un pupazzo di neve gigante. (Element)
the grandpa was making a puppet of snow enormous
The grandpa was building a huge snowman.

(2) Era mattina presto. (Preamble)
was morning early
“It was early in the morning.”
b. Il ragazzo pulì la camera di fronte. (Element)
The boy cleaned the room of front

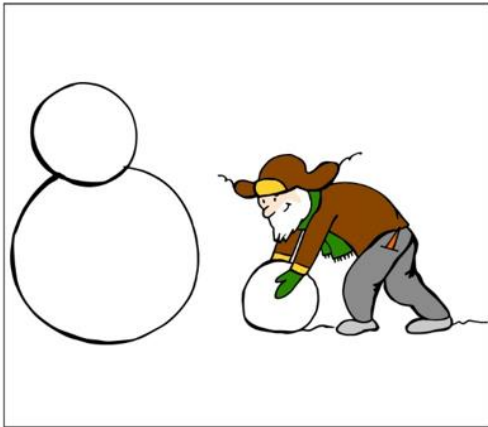
“The boy cleaned the front room.”

The visual displays represented two different versions of the same event: one ongoing event and another completed event. The pictures were displayed on screen side by side so the participants could look at the most relevant.

Picture 1.

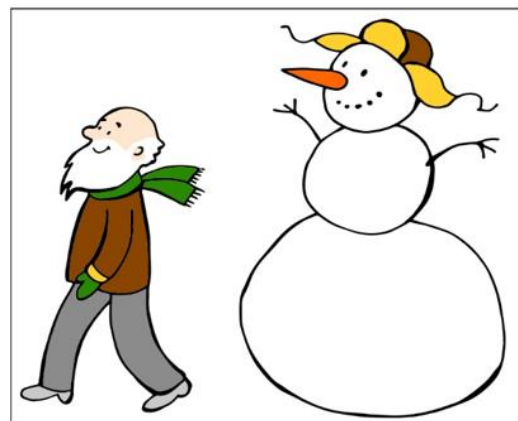
1.a represents an ongoing event,

a.



1.b represents a completed event.

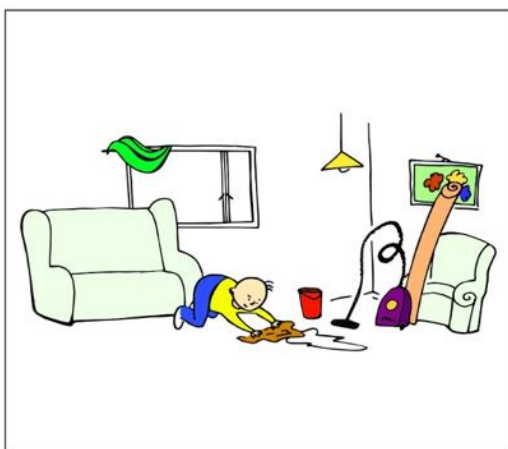
b.



Picture 2.

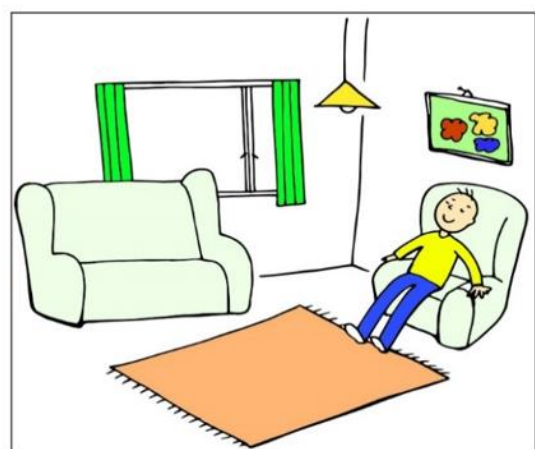
2.a represents an ongoing event,

a.



2.b represents a completed event.

b.



Each participant was assigned randomly to one of the 4 lists which were created. 2 lists had items alternating perfective and imperfective aspect and the other 2 had target picture and competitor picture reversed compared to the original. This was done to balance the position of the target pictures. Each list began with a filler item so that the participants could get acquainted with the procedure.

The experiment also included 24 filler items of audio inputs and visual displays. The filler items were presented the same as the experimental items, but they did not change in the lists. Half of the fillers described an ongoing event and the other half a completed event. Moreover, the images showed a target picture representing the event and a competitor picture representing a different event.

The experiment was set using *Web Gazer* for collecting eye-tracking data and *JATOS* as a library.

2.2.3 Procedure

Prior to starting the experiment participants were asked to provide their informed consent by signing an informed consent form.

Participants performed the experiment from home, using their own computer. Before starting with the task, they went through an eye-gaze calibration. Eye-gaze calibration was repeated during the task to assure the precision of the data collection.

Participants were told they were going to hear a story and that they should look at the picture which best displayed the event they were hearing. The story comprised a short introductory sentence and a sentence which described the event, either in the perfective or imperfective form.

The experiment lasted approximately 15 minutes. Participants had to wait until the signalled end of the experiment to close the browser window for the data to be saved. Data from participants who did not complete correctly the experiment was not included.

Data was analysed using the statistics software R fitting a mixed effects logistic regression. The log-odds estimated the accuracy of the response, using the aspectual condition (Perfective vs. Imperfective) as a fixed effect.

2.3 Results

Figure 1

Imperfective looks to target.

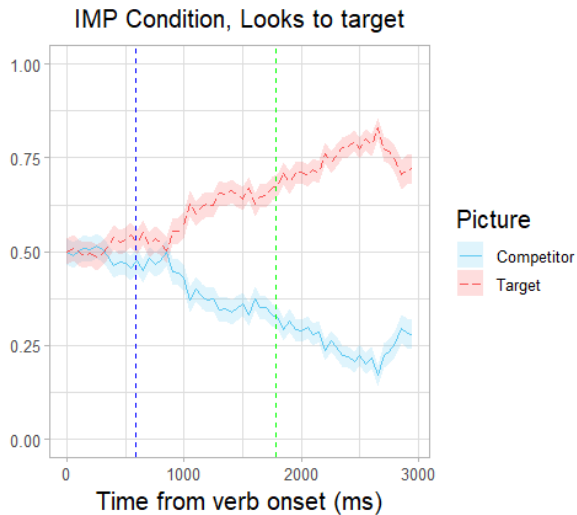


Figure 2

Perfective looks to target.

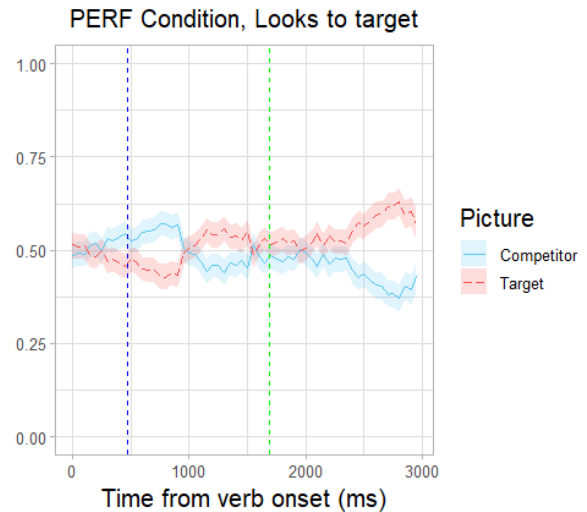


Figure 1 represents the looks to target in the Imperfective condition, where the looks are dependent on the time from the onset of the verb (starting at 500ms). The looks represent the number of times which participants correctly associated the sentence to the target picture. Figure 2 shows the same results for the target Perfective condition. The blue dotted line represents the offset of the verb, while the green dotted line represents the offset of the sentence. Figure 1 shows that participants looked equally at both the target and competitor pictures until the offset of the verb (around 530ms), after which they started looking more at the target picture. By the offset of the sentence, they had already fixated on the target picture for almost 1000ms, indicating a clear preference for the target picture, which matched the imperfective aspect with an ongoing event.

Figure 2, however, showed a different pattern of results: at the offset of the verb (around 480ms), participants fixated more on the competitor picture than on the target picture. Only after around 1000ms did they started looking more at the target picture, although they did not make a final decision until around 2400ms.

Figure 3

General looks to target

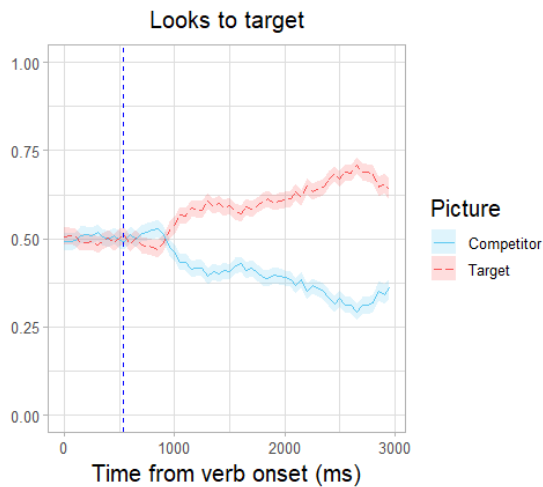
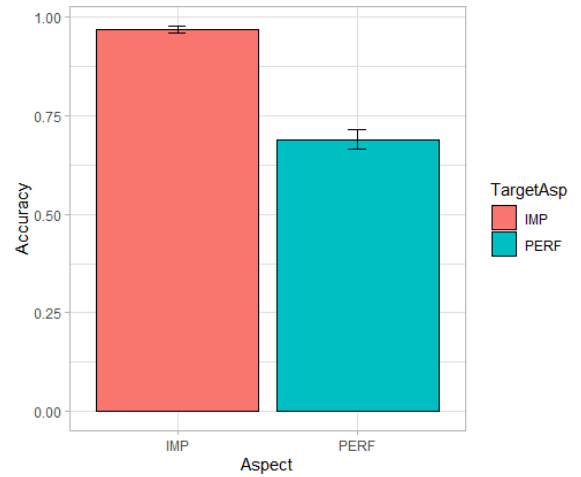


Figure 4

Accuracy



In general, participants looked at the target picture more than at the competitor (as shown in Figure 3). Accuracy is above chance in both the imperfective and the perfective aspect. Figure 4 shows accuracy, dependent on the number of times which participants correctly looked at the Imperfective or Perfective aspect. However, there is a significant difference between the accuracy for the Imperfect aspect and the accuracy for the perfect aspect. Accuracy for the imperfect is around 98%, for the perfect is around 70%.

2.4 Discussion

The present study aimed to investigate the relationship between grammatical aspect and visual preference for event representation. It was hypothesized that the imperfective aspect would elicit a preference for an ongoing event picture, while the perfective aspect would elicit a preference for a completed event picture. In particular, participants were expected to exhibit a preference for the picture corresponding to the event at the offset of the verb, which would indicate the aspectual preference. However, the results did not confirm the hypothesis in both cases. The first explanation to these results came from the idea that the images were not always well suited for the description of the sentence and participants might have had some difficulties coding them. Secondly, people from the North of Italy do not usually use the *passato remoto* when they speak. For this reason, hearing it during the test might have not prompted the immediate response, which underwent some reasoning instead.

Below, the results for both the imperfective and the perfective aspect are discussed as well as some suggestions for possible follow-up experiments.

Overall, the general looks to the target confirmed the thesis, showing that participants tended to look at the target pictures when hearing the corresponding aspect. Both tests for accuracy are significant and above chance: 98% for the Imperfective aspect and 70% for the Perfective aspect. The test for the Imperfective aspect confirmed the initial thesis, since participants fixated on the ongoing event picture soon after hearing the offset of the verb and the accuracy of look is 98%.

However, the test for the perfective aspect raises some questions. It must be underlined that even if the accuracy is significant, 70% is a much lower value than the 98% score of the imperfective aspect. Moreover, the looks to the target graph (Figure 2) shows some significant information. Indeed, participants did not show a preference before the offset of the sentence, while for the Imperfective aspect they started looking at the target picture soon after the offset of the verb. For the Perfective aspect, they appeared to look more at the competitor picture after the offset of the verb, and then they looked at both until the offset of the sentence, when they decided for the target picture. It can be argued that participants did not make an immediate decision, but rather a resonated one. They had to compare the two pictures and based on the ongoing event picture, they decided that the picture that better described the audio input was, in fact, the completed event picture.

As mentioned at the beginning of the discussion, the hypothesis for this behaviour could be attributed to the ill-fitted images and the difficulty in coding the *passato remoto* by speakers from the North of Italy. For these reasons, a follow-up experiment for picture description was conducted after the main experiment to check whether the pictures or the verb tenses could have posed a problem for the participants.

Results from this experiment and the *Aspect Processing across Languages* study (Minor, 2023) on Spanish participants seems to rule out the first option. Indeed, when looking at the graph for the perfect aspect in Spanish participants, the looks before the offset of the verb are very similar to those from the Italian participants, with a slight preference for the competitor picture.

However, the set of images used in the Spanish experiment was slightly different from the Italian set, so this cannot be confirmed with certainty.

3. Picture Norming

A second experiment was conducted to assess whether the results were influenced by the picture stimuli, analysing how people from different parts of Italy described the events in these pictures. The norming phase is a procedure employed in psychological tasks which aims at looking at the typical performance among a group of individuals (Delagaram-Nejad, 2022). In our case, the goal was to ensure that the images used in the main research were clear to the participants and to assess whether there was a difference in tense use among participants from different parts of Italy.

3.1 Participants

Participants were 16, aged 25 to 59 years old (mean= 29). Eight people were from the North of Italy and eight from both the Centre and the South. They were recruited through acquaintances of the researchers and Facebook groups.

Table 1.

Participants' demographics overview.

Number	16
Mean age	29
Region of provenance	50% North; 50% Centre and South

3.2 Method

The follow-up experiment was set on *Psychopy* and run on the online platform *Pavlovia*. Participants were asked to sign an informed consent prior to starting the experiment and then to provide some information regarding their age (>18) and their region of provenance. Then, they were given some instructions to start the experiment. Participants were asked to provide a brief description of the images they would see, using a verb in the past form and mentioning all the elements in the picture. The pictures were shown one at a time. No chosen verb was given. Before commencing the task, they were shown an example consisting of 3 sentences, each describing a picture.

The experiment consisted of 2 lists of 24 items each. The items were the same images which were used for the main experiment. Both lists had an equal number of events depicting a completed and an ongoing event. The order was randomised manually.

Participants were assigned manually to one of the two lists: each list had 8 participants, 4 from the North of Italy and 4 from the Centre or the South.

Participants had to fill out a Google Form to sign the informed consent and provide their email, so to later receive the link to the experiment. In order to complete the experiment, they had to have access to a PC. The experiment lasted approximately 15 minutes.

3.3 Results

The norming phase shows that there is a difference in the use of the perfective aspect among participants from the North and from the Centre or South. Table 1 shows a preference of 32% for the Perfective aspect among participants from the North, and of 44,5% among participants from the Centre or South.

Table 1.

Mean percentages of perfective aspect use among participants, where mean perfective is the dependent variable.

Region and Condition	Mean PERF
North	23%
IMP	14%
PERF	32%
Centre/South	27,5%
IMP	12,5%
PERF	44,5%

Results also show a tendency of not using the target verb when the condition is perfect. Table 2 shows the percentage in the use of the Perfective aspect by every participant for each item (when the percentage was below 50%), both in list 1 and list 2.

Table 2.

Mean percentages in the use of the perfective aspect for items of list 1 and 2. The target verb (*perfective*) is the dependent variable.

Item	List	Target verb (Perfective)
1	1	0%
2	1	43%
3	1	38%
6	1	0%
8	1	0%
15	2	38%
17	1	13%
20	2	38%
21	1	13%
23	2	25%

When the percentage for the target verb was particularly low, we looked at the alternative verbs the participants used. In some cases, they all employ the same or a similar verb to describe the images. For instance, for item 1 multiple participants choose the verb *guardare* or *osservare* (to look at), while the target verb is *appendere* (to hang). However, percentages in the use of the target verb in the same aspect for the Imperfective form are higher (Table 3).

Table 3.

Mean percentages in the use of the Imperfective aspect for items of list 1 and 2. The target verb (*Imperfective*) is the dependent variable.

Item	List	Target verb (Imperfective)
1	1	63%
2	1	100%
3	1	100%
6	1	100%
8	1	100%
15	2	88%

17	1	100%
20	2	100%
21	1	88%
23	2	100%

Table 2 does not include cases where the target verb was used in constructions as “*finire di*” + *target verb* (“to end to” + target verb) or where the target verb was used in a subordinate clause. However, these constructions substituting the target verb for the perfective aspect are used at 13%.

Table 1 shows that people from the Centre and South match the perfective aspect at 44,5%, while people from the North match it at 32%. Table 4 summarizes the tense used by speakers from the Centre and South and North of Italy in alternative to the perfective.

Table 4.

Mean percentages of passato prossimo or trapassato prossimo and imperfect use among participants, where mean perfective is the dependent variable.

Region and Condition	Mean Past Perf.	Mean IMP
North	9%	77%
IMP	2%	86%
PERF	16%	68%
Centre/South	10,5%	73,5%
IMP	4%	87,5%
PERF	17%	56%

Table 4 shows that participants in general tend to use the imperfect to describe an image where the target verb is perfective, while the *passato prossimo* or *trapassato prossimo* are used at 16% for speakers from the North (where 1 participant only used these forms or the present) and at 17% for speakers from the Centre or South.

3.4 Discussion

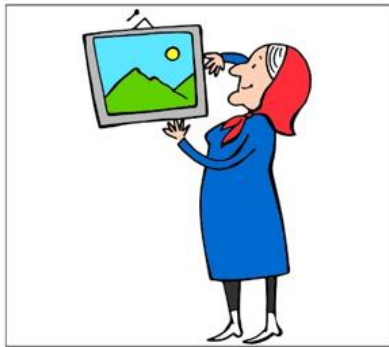
The norming phase showed significant differences between participants from the North and Centre or South of Italy in using the perfective form. Indeed, people from the North used the perfective at a 32%, compared to the 44,5% of people from the Centre or South of Italy, suggesting a preference in the use of the perfective for the people of the Centre or South. Moreover, people from the North of Italy would be expected to use forms such as *passato prossimo* to describe events where the target verb was perfective. However, this was not the case: people from the North used it at 16%, while people from the Centre and South used it at 17%. These percentages did not constitute a significant difference, but they proved there was no preference for the expected form by people from the North. In general, the preferred form was the imperfect, used at 68% for the North and at 56% for the Centre and South.

These results lead to deepen the investigation on the imperfect tense and the perfective tense. As analysed in the introduction to this study, in their daily life people from the North of Italy would use forms such as *passato prossimo* or *trapassato prossimo*, alternatively to *passato remoto*. However, this was not the case, and the preferred form was the imperfective. The imperfective in Italian can have both temporal and non-temporal readings as it is not indexical. It acquires indexicality based on the context. For this reason, it is characterized by aspect neutrality, contrary to forms such as *passato prossimo*, *trapassato prossimo* and *passato remoto*, which always specify the events (Giorgi and Pianesi, 2001; Giorgi, 2016). A possible explanation for the profuse use of the imperfective form is that this form is commonly used for storytelling, so speakers will tend to use it to describe a situation, when it's fictional and unrelated to their own personal life (Giorgi, 2016). In particular, the *imperfetto* needs anchoring to the context and during the norming phase participants were only instructed to use a past tense; however, the collocation of the event in the past can also depend on the verb choice (e.g., telic verbs) (Giorgi and Pianesi, 2001), so an analysis on all the verb forms used by the participants in the norming phase should be conducted. As far as the *passato remoto* is concerned, results proved that people from the Centre and the South prefer this tense compared to people from the North, confirming a familiarity that speakers from the northern regions of Italy might not have. Indeed, the *passato remoto* is usually used by people from the southern regions to speak about events in their past, while people from the North recognise the *passato remoto* as a tense describing an external event (Giorgi, 2016).

Moreover, the results showed that participants had some difficulties in choosing the target verb when shown the image which was meant to elicit the perfective form. This may be due to lower event codability for images in the perfective condition. Indeed, many participants described the picture from item 1 in list 1 (Picture 2) with the verbs *guardare* or *osservare* (to look at), instead of using the target verb *appendere* (to hang). It should be underlined that the results also showed a match of 63% for the same verb in the Imperfective aspect (Picture 1). However, the match for the other verbs resulted in much higher percentages, suggesting that the main issue was posed by pictures depicting completed events.

Picture 1

Appendere (to hang) in the imperfective form



Picture 2

Appendere (to hang) in the perfective form



Pictures 1 and 2 illustrate the ongoing and completed events were participants preferred the verb “to look at” instead of “to hang”.

4. General Discussion

The current study explored the relationship between grammatical aspect and visual preference for event representation. Specifically, the study aimed to investigate whether the use of imperfective and perfective aspects in language influences individuals' preferences for ongoing or completed event representations. While initial hypotheses suggested that the imperfective aspect would lead to a preference for ongoing event depictions, and the perfective aspect would favour completed event representations, the results of our experiment did not completely support these expectations.

Our investigation into the imperfective aspect offered results largely in line with our initial hypothesis. Participants exhibited a clear preference for the picture corresponding to the event at the offset of the verb, providing evidence that the imperfective aspect prompts a preference

for ongoing event depictions. The findings related to the perfective aspect, however, presented a twist: the eye-tracking data revealed that participants did not show a clear preference before the offset of the sentence. Instead, they seemed to go through reasoning, initially looking more at the competitor picture and eventually selecting the target picture. The norming phase was helpful to determine the reason for this behaviour.

The norming phase revealed some disparities in the use of the perfective aspect between Northern Italian participants (32%) and those from the Centre and South (44.5%), indicating a preference for the perfective in the latter group. Northern participants did not predominantly use *passato prossimo* for perfective verbs (16%) as expected. Instead, the imperfect tense was favoured (68% in the North, 56% in the Centre/South). This highlighted the need for a deeper exploration of imperfect and perfective tense usage. The Italian imperfect aspect neutrality and its common use in storytelling may explain its prevalence. The lack of contextual cues in the second study may have led to its adoption in past tense contexts. Regarding the *passato remoto*, individuals from the Centre and South exhibited a stronger preference than Northern speakers, reflecting their greater familiarity with the tense. The results also revealed difficulties in selecting the appropriate verb for the Perfective aspect, mainly due to image clarity issues, especially for events perceived as completed.

The norming phase highlighted some disparities in the use of the *passato remoto* among speakers from different regions in Italy, so it is apparent that the speakers from the North of Italy have difficulties in coding the *passato remoto* and this influenced the results in the main study. However, the same results might have been influenced by the misinterpretation of the pictures, especially regarding completed events. Indeed, percentages in matching the target verb for the perfective aspect are below 50% in most cases. These percentages pose the question of whether the results would be the same if the match between the target verb and the picture was above 50% or higher.

5. Conclusion

The present study aimed to investigate the processing of imperfective and perfective aspects in Italian using a visual-world eye-tracking paradigm. The results partially confirm our initial hypothesis, demonstrating that participants associate ongoing event pictures with the imperfective aspect. However, the findings for the perfective aspect indicate a more deliberate processing pattern, as fixations converged on completed event pictures only after the sentence offset. The follow-up study sought to investigate whether regional differences in the use of the *passato remoto* plays a role in the observed processing patterns, confirming the hypothesis that Northern speakers of Italian have difficulties coding the *passato remoto*. These findings prompt future studies where the *passato remoto* can be substituted by the *passato prossimo*. The following studies should ask as background questions the region of provenance as well as the level of education, to better assess the nuances in the use of the Italian language.

In the subsequent follow-up study, participants showed some difficulties in coding the images, especially for completed events. This phase was conducted in a non-controlled environment, which was not ideal when analysing the aspect of a verb. A future study should take this into account, conducting a norming phase before the main study. In addition, the norming phase should comprise two parts: one non-controlled task and one controlled task. This could help understanding the preferences among participants and it would provide important information on how to construct the study.

In conclusion, this study contributed to a deeper understanding of how linguistic aspect is interpreted among languages, in particular the Italian language, and it underlined the need for continued investigation in the field.

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