

Indefinites and Free Choice

When the Past Matters

Abstract Indefinites display a great functional variety and they give rise to different pragmatic effects. We focus on free choice indefinites and in particular on the Italian *qualsiasi*. Our aim is to reconstruct the grammaticalization path of this item and understand how diachronic data might shed some light on existing semantic theories of free choice. We employ corpus-based tools to build a database containing occurrences of *qualsiasi* from its origin and early forms to its current usage. We show that *qualsiasi* emerged from a particular unconditional construction and we outline the different stages which led to its grammaticalization. We analyze the compatibility of our diachronic study with formal accounts of free choice inferences, with a focus on Alternative Semantics analyses for indefinite pronouns and so-called grammatical theories of free choice. Our work shows that an integration between formal semantics and historical linguistics is fruitful and worth pursuing.

Keywords formal semantics and pragmatics · historical linguistics · indefinites · free choice

Introduction

Most languages show a fairly uniform morphosyntactic behaviour of indefinite expressions.¹ For instance, indefinites are either derived from interrogative structures by means of an indefinite marker (e.g. the Latin *quidam*, ‘someone’), or they are formed from an indefinite marker together with a general ontological-category noun (e.g. the English *any*-series). On the other hand, indefinites display a variety of functional distinctions, which are related to each other in a complex, but cross-linguistically interrelated, way. To see this, consider the contrast in ‘Someone/anyone knows the answer’. While *someone* indicates that there is a specific person who knows the answer, *anyone* has clearly a non-specific flavour. In Haspelmath (1997)’s terms, this amounts to the distinction between *specificity* versus *non-specificity*. Another important function, exemplified in (1a), is the *Free Choice* function (FC):

Address(es) of author(s) should be given

¹ (See Haspelmath, 1997; Becker, 1999; Farkas, 2002; Alonso-Ovalle and Menéndez-Benito, 2010).

(1) *Free Choice indefinite (English anything)*

- a. John can take **anything** from the fridge.
- b. John can take something from the fridge and every option is permitted.

In (1a) the speaker, besides claiming that John can take something, informs the addressee that all options are permitted possibilities. In this case, we say that the indefinite pronoun *anything* expresses the FC function.

As noted by Haspelmath (1997), a salient feature of indefinite pronouns, and FC ones in particular, is their short lifespan, since they do not tend to be stable elements of the grammar.² This implies that indefinite expressions can in principle lose existing functions or acquire new ones, as well as shift from being marginal to common in a given language.

In a few points of his work, Haspelmath (1997) outlined, based solely on etymological considerations, a diachronic typology of indefinite pronouns, explaining how they might arise and change over time across different languages. To our knowledge, with the exception of Aguilar-Guevara et al. (2011), de Vos (2010) and Aloni (2017), there is no previous work which tried to empirically study the grammaticalization paths of FC indefinites by looking at the diachronic evolution of specific items.³

Existing semantic accounts of free choice have all their merits and each of them contributes to our understanding of free choice phenomena.⁴ However, none of them takes into serious consideration diachronic aspects in their analyses or at least try to link diachronic considerations to the salient properties and distribution of FC indefinites.⁵ As noted above, indefinite expressions constitute a dynamic environment and understanding how they develop in different forms across languages and acquire a grammatical status can potentially lead to new insights for the semantic debate as well.

In the present work, we will describe the diachronic development of the Italian indefinite determiner *qualsiasi*, which exhibits free choice functions. There are at least three reasons to engage in such study. First, it will provide us with a detailed description of the development of an Italian indefinite determiner, which is, independently of our goals, a relevant contribution to the field of historical linguistics. Second, language change is not only important for descriptive purposes, but it is a fundamental aspect of human language. Understanding how language changes is crucial for understanding what language is. Lastly the synchronic picture of language is, after all, the result of its diachronic phases. As we will see, our diachronic findings will shed light on some aspects of existing semantics accounts of

² Evidence of this comes from the fact that their recent grammaticalization can still be witnessed in the indefinites themselves.

³ See however Company Company (2016); Company Company and Loyo (2006), which contain some interesting data regarding the Spanish FC indefinite *cualquier(a)*. See also Gianollo (2019) for a valuable work on indefinite pronouns and determiners between Latin and Romance, even though it touches only marginally FC ones.

⁴ See among many others Kadmon and Landman (1993); Dayal (1998); Giannakidou (2001); Sæbø (2001); Kratzer and Shimoyama (2002); Jayez and Tovenia (2005); Aloni (2007); Menéndez-Benito (2010); Chierchia (2013).

⁵ A salient feature of FC indefinites is their fairly stable cross-linguistic distribution. For instance, they are allowed in possibility statements, but they are often disallowed in episodic contexts. See Dayal (2004) for an overview.

FC indefinites. This means that formal semanticists, usually concerned only with the synchronic picture of language⁶, can potentially benefit from insights related to diachronic linguistics.

This paper is structured as follows. Section 1 contains some general considerations on the Italian system of FC indefinites and elaborates on the reasons which led us to take into consideration the indefinite *qualsiasi* and not others. Section 2 contains our corpus study and Section 3 discusses our diachronic results. Section 4 outlines how the emergence of the FC indefinite *qualsiasi* occurred. In Section 5 we discuss how our data might be interpreted in light of existing semantic accounts of free choice. Section 6 concludes, explaining how the empirical adequacy of semantic theories should not be simply measured synchronically, but also diachronically.

1 Italian Free Choice Indefinites & *Qualsiasi*

1.1 Outline of Italian FC Indefinite Pronouns

The Italian language exhibits a great variety of indefinite pronouns and determiners. With particular regard to FC indefinites, the most common ones are described in the table below:

ITEM	TYPE	ORIGIN	ETYMOLOGY
<i>qualunque</i> ¹	determiner	< 12 th c.	‘qual(e)’ (<i>which</i> -INTER.) from Latin <i>qualem</i> + ‘unque’: a contamination of the final sequence of the Latin <i>qualiscumque</i> with <i>unquam</i> (<i>ever</i>).
<i>chiunque</i> ²	pronoun	< 12 th c.	‘chi’ (<i>who</i> -INTER.) from Latin <i>qui</i> + ‘unque’
<i>qualsiasi</i>	determiner	17 th c.	‘qual(e)’ (<i>which</i> -INTER.) + ‘si sia’ (<i>it is</i> -PRES.SUBJ.)
<i>qualsivoglia</i> ³	determiner	14 th c.	‘qual(e)’ (<i>which</i> -INTER.) + ‘si voglia’ (<i>it wants</i> -PRES.SUBJ.)

¹ As noted in the etymology column, in vernacular languages of Italy, the generalizing Latin suffix *-cumque* was mixed with the adverb *unquam*. This led to several variants in distinct regions of Italy (e.g. the Antico Lombardo *qualunca* or the Abruzzese *chönunghə*). See Rohlfs (1966). With the progressive prominence of the dialect of Florence as the canonical standard of Italian, only the forms in the table survived.

² *Qualunque* and *chiunque* resemble the English ‘*wh-ever*’ series. However, it should be noted that *qualunque* functions as a general determiner, whereas *chiunque* admits only pronominal *who*-uses.

³ At the beginning of their uses, *qualsiasi* and *qualsivoglia* were not invariable (e.g. the plural use *qualsi-siano* with the third-person plural of the present subjunctive of *to be*). With the loss of transparency due to grammaticalization, inflection is not possible anymore. Interestingly, *qualsivoglia* also admitted a second-person singular version: *qual-ti-voglia*.

Table 1 Main FC indefinites in Italian

Due to the early origin of *-unque* Italian indefinites, it would be difficult, if not impossible, to conduct a comprehensive diachronic study for those items. Moreover, in current Italian *qualsiasi* is a far more common indefinite than *qualsivoglia*,

⁶ Notable exceptions are Eckardt (2006); Condoravdi and Deo (2014); Deo (2015b). See Deo (2015a).

which is normally used for emphatic or marked purposes. Consider also the following frequency graph based on the 2019 Italian corpus of *Google Ngram Viewer*:⁷

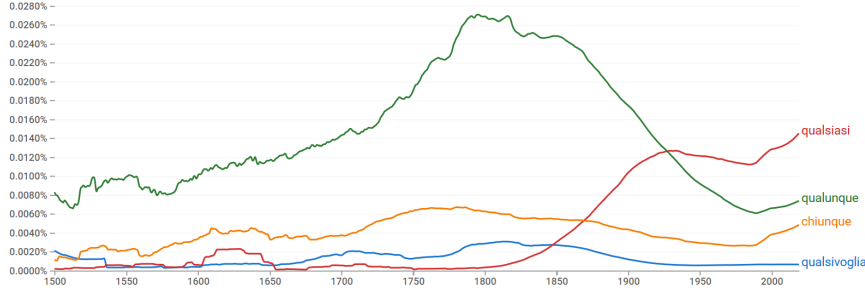


Fig. 1 *Google Ngram Viewer* – 2019 Italian Corpus

The graph above confirms how dynamic the environment of FC indefinites is. This implies that analyzing how these items developed is crucial to their correct understanding. It is important to note that these shifts would not be surprising in the case of ‘content’ words, which may simply change due to sociological reasons.⁸ Indefinite pronouns are functional elements and belong to the grammar, which we might expect to be fairly stable. In particular, the focus of our work will be on the indefinite *qualsiasi*. We believe that studying the development of an item lately introduced in the Italian vocabulary, and whose occurrence shifted from being rarely present to being the most common indefinite pronoun, might provide useful insights with regard to its evolution and semantic changes.

1.2 Introduction to *qualsiasi*

Qualsiasi is a compound word originated from the *wh*-element ‘qual(e)’ and ‘siasi’ (the present subjunctive ‘sia’ of the verb to be, and the 3rd singular person enclitic ‘si’). According to the Italian dictionary by De Mauro (2000), the first occurrence of *qualsiasi* dates back to the year 1610, even though, as we will see, in our corpus study we found only three examples before the 19th century. Since the presence of *qualsiasi* was scarce, we also took into consideration the diachronic development of the proclitic form *qualsisia*, where the clitic ‘si’ precedes ‘sia’, which is significantly more common than *qualsiasi* in the 17th century, and mostly absent after the 18th

⁷ We are aware (see James and Weiss, 2012) that *Google Ngram Viewer* has been largely criticized for poor OCR and incorrect metadata, such as the year of publication. This might have a huge impact on the interpretation of the results. However, given the large number of texts available after the 18th century, we suppose that some general considerations regarding the distribution of the Italian vocabulary can still be made. From a diachronic point of view, instead, *Google Ngram Viewer* cannot be considered a valuable resource. Indeed, we found several instances of *qualsiasi* before the 1800s, but the corresponding year was incorrect with an error of at least one century.

⁸ (See e.g. Bybee, 2015, ch. 9).

century, if not as a form of archaism. Moreover, we also investigated the whole expression *qual si sia*, from which the compound forms were originated according to the Italian historical dictionary by Battaglia and Barberi Squarotti (2002).

The presence of the *wh*-element *qual* might suggest that the first environment in which *qual* appeared together with *si* and *sia* was a direct or indirect interrogative clause like (2), from a letter of Michelangelo Buonarroti:⁹

- (2) *Non so qual si sia meglio, o 'l mal che giova, o 'l
Not know which CLITIC is.SUBJ better, or the evil that benefits, or the
ben che nuoce.
good that harms.*

‘I do not know what is better, the evil that benefits [us], or the good that harms.’

(Michelangelo Buonarroti, *Letter to Clement VII*, 1525)

In (2) we observe that the usage of *si* seems to have a strengthening effect on the whole utterance, but it does not play an essential role in the corresponding argument structure of *sia* and it can be potentially omitted.¹⁰ Admittedly, an indirect interrogative clause like (2) does not seem to be related with the meaning of FC.¹¹ Consequently, if we want to understand where the free choice reading originated, we have to look elsewhere. Some verses, in this regard, might provide an interesting insight. Consider (3), from the Italian poet Francesco Petrarca, active in the first part of 1300s.

- (3) *ivi fa che 'l Tuo vero, / qual io mi sia, per la mia
then let that the your true, / who I I:1ST.CLITIC is.SUBJ, for the my
lingua s'oda.
tongue listens.*

‘Now let your truth, no matter who I am, be heard through my words.’

(Francesco Petrarca, *Canzoniere* 128, 1344)

Even if (3) contains the first-person singular clitic *mi*, and not *si*, we observe that the combination *qual* + clitic + present subjunctive of *to be* can be used in the concessive construction ‘qual io mi sia’.¹² As the paraphrase in (3) shows, this

⁹ The example we are considering in this preliminary section occurred after the FC uses of *qual si sia*. However, as we will see in our diachronic study, the first occurrences of the expression *qual si sia* were indeed indirect interrogative structures.

¹⁰ It is interesting to note that, to our knowledge, this particular use of *si* is not discussed in the literature (e.g. Cinque, 1988). Indeed, in current Italian a sentence like (2) is quite odd, but it is acceptable without the *si*. On the one hand, one may wonder if it makes sense to study such peripheral uses of the language. On the other hand, it seems that such strengthening usage of the clitic was quite standard in early stages of Italian, while nowadays it is limited to very marked cases (see fn. 12). If that is the case, one may wonder if these diachronic differences might contribute to our understanding of the Italian clitic system from a diachronic point of view.

¹¹ However, we note that *qual* is indeed an interrogative determiner and a proper account of *qual-siasi* should also take this element into consideration.

¹² The use of the clitic *mi*, in this construction, has again a strengthening effect. This usage survived in current Italian only in very marked forms such as ‘Io mi pensavo che’ (I *mi* thought that).

resembles the generalizing or free choice reading typical of the indefinites under investigation. This seems to get us on the right track. Let us see if and how data from diachronic corpora are in line with these preliminary remarks.

2 Diachronic Study

In this section we introduce the corpora and the data used in our study. Our diachronic study comprised four resources ranging from the 10th century to the year 2019:

1. OVI (Opera del Vocabolario Italiano)¹³:
corpus of Old Italian ranging from the 10th century to end of the 14th century. It includes 24 billion words (occurrences) from roughly 2000 texts.
2. M.I.DIA. (Morfologia dell’Italiano in DIAcronia)¹⁴:
corpus of written Italian with a temporal distribution between the beginning of the 12th century and the year 1947. It contains 7.5 billion occurrences from 800 texts.
3. LIS (Lessico dell’Italiano Scritto)¹⁵:
corpus of written Italian from 1861 to 2001 with a total of 25 billion occurrences.
4. Corriere della Sera¹⁶:
Italian daily newspaper founded in 1876. We extracted the data from the online version of the newspaper from 2000 to 2019.

As said before, due to the origin of *qualsiasi*, the following items were analyzed: *qualsiasi*, *qualsisia* and *qual si sia*. Unfortunately, only single-word queries were possible in M.I.DIA.. In order to obtain the results of *qual si sia*, we searched all the occurrences of *qual* and we obtained the desired examples by standard regular expression techniques. Among our corpora, only M.I.DIA. allowed for downloading the results in CSV format. In the other cases, the examples were manually added from a random selection.

2.1 Annotation

Each example was labelled according to the scheme in Table 2 which corresponds to (4).

¹³ <http://www.oivi.cnr.it/index.php/en/>

¹⁴ <http://www.corpusmidia.unito.it/>

¹⁵ <http://193.205.158.203/metamotorelessico/MetamotoreLessico.html>

¹⁶ <http://archivio.corriere.it/Archivio/interface/landing.html>. The latter cannot be strictly classified as a corpus (since it is not meant to serve that purpose), but as a searchable archive of all its issues.

CORPUS	M.I.DIA.
SOURCE	GIU5.COSTITUZ00
(TYPE OF TEXT)	legal prose
YEAR	1948
LEMMA	<i>qualsiasi</i>
FORM	plain <i>qualsiasi</i>
FUNCTION	FC (Free Choice)
(SYNTAX)	PP (Prepositional Phrase)
LEFT CONTEXT	<i>Ogni cittadino può circolare e soggiornare liberamente in</i>
OCCURRENCE	<i>qualsiasi</i>
RIGHT CONTEXT	<i>parte del territorio nazionale</i>

Table 2 Example of annotation scheme

- (4) *Ogni cittadino può circolare liberamente e soggiornare liberamente in*
QUALSIASI parte del territorio nazionale.

‘Every citizen can move freely and stay freely in ANY part of the national territory.’
(Italian Constitution, 1948)

The following remarks should be taken into consideration. In the case of M.I.DIA. the year was not provided and only an alphanumeric string for the source was available. We established the year by first determining the original source in the corpus’s documentation and then finding the corresponding year of publication. If only a period of time was available, a random year within the latter was chosen. Second, syntax and type of text were labelled only when linguistically relevant (e.g. archaism, jargon, . . .). Besides its standard determiner position, *qualsiasi* can also combine with the indefinite article *un* and can occur in a post-nominal position with an adjective-like behaviour:

1. plain *qualsiasi*:

qualsiasi precedes the noun and is not combined with an article, as in (5):

- (5) *Mario può mangiare qualsiasi gelato.*
 Mario can eat any ice-cream.
 ‘Mario can eat any ice-cream.’

2. *un qualsiasi NP*:

qualsiasi precedes the noun and is combined with an indefinite article (i.e. un[o/a]), as in (6):

- (6) *Prendi una qualsiasi carta dal mazzo!*
 Take-IMP a any card from-the deck!
 ‘Take any card from the deck!’

3. post-nominal *qualsiasi*:

qualsiasi precedes the noun and might be combined with an indefinite article, as in (7a), or not, as in (7b):

- (7) a. *Questo è un pretesto qualsiasi per non fare i compiti.*
 This is a excuse QUALSIASI to not do the homework.
 ‘This is just an excuse to not do the homework.’
- b. *Questi sono semplicemente (dei) pretesti qualsiasi per non fare i compiti.*
 These are simply (of-the) excuses QUALSIASI to not do the homework.
 ‘These are just excuses to not do the homework.’

Accordingly, for each example we specified its form and we further classified it in some relevant categories. The latter were based on Haspelmath (1997) together with some functions introduced in Aguilar-Guevara et al. (2011) and a few introduced in the present work.

Haspelmath was the first to use a semantic map to organize the main functions of indefinites. A semantic map is a tool for a cross-linguistic visualization of linguistic expressions, which share some semantic/functional features (e.g. morphemes, constructions, concepts). The functions are organized in an implicational way: a certain item always expresses functions which are contiguous (i.e. connected by a line) on the map. An extended semantic map given by Aguilar-Guevara et al. (2011) is represented in Figure 2, where the boldface labels indicate the new functions introduced by Aguilar-Guevara et al. (2011).¹⁷

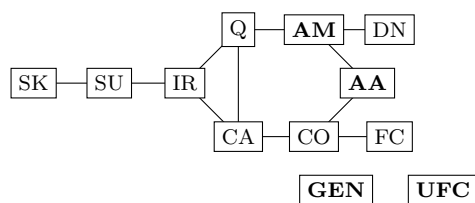


Fig. 2 Aguilar-Guevara et al. (2011)'s semantic map

Besides the functions in the figure above several off-map functions were introduced to deal with all the occurrences of *qualsiasi*. In certain cases, our item did not behave as an indefinite and therefore new labels for classifying all the examples were needed.

The first off-map function is the Indiscriminacy function (IND), which comes from Horn (2005) and is exemplified in (8). IND is usually existential and it gives an average and sometimes pejorative flavour to the noun it is associated with.

- (8) *Io non voglio un libro qualsiasi, ma il nuovo romanzo di John Banville.*
 I not want a book QUALSIASI, but the new novel of John Banville.
 ‘I do not want an ordinary book, but the new novel of John Banville’s.’

¹⁷ For a general discussion about the use of semantic maps in lexical typology, see Haspelmath (2003) and Riemer (2015, ch. 25).

	ACR.	FUNCTION	EXAMPLE
a.	SK	specific known	Somebody called. Guess who?
b.	SU	specific unknown	I heard something, but I couldn't tell what.
c.	IR	irrealis	You must try somewhere else.
d.	Q	question	Did anybody tell you anything about it?
e.	CA	conditional antecedent	If you see anybody, tell me.
f.	CO	comparative	John is taller than anybody.
g.	DN	direct negation	John didn't see anybody.
h.	FC	free choice	You may kiss anybody.
i.	AM	anti-morphic	I don't think that anybody knows the answer.
j.	AA	anti-additive	I avoided taking any decision.
k.	UFC	universal FC	John read any book on lions he could find.
l.	GEN	generic	Any dog has four legs.
m.	no matter	no matter	Tutti gli uomini, di qualsiasi intelligenza, vanno rispettati. 'All humans, no matter what their intelligence is, need to be respected.'
n.	IND	indiscriminacy	I do not want to go to bed with just anyone anymore.
o.	US	universal strengthening	I rischi di ogni qualsiasi industria. The risks of 'every any' industry.
p.	expression	expression	In any case, the sun is shining outside.

Table 3 Functions & Examples

Another important off-map function is the *no matter* one, introduced by Aguilar-Guevara et al. (2011), which roughly corresponds to an English 'whatever' construction without strictly behaving as an indefinite. An example is provided in (9):

- (9) *Tutto questo, di qualsiasi cosa si tratti, finirà.*
 All this, of QUALSIASI thing CLITIC regard, finish-3SG-FUT.
 'All this, whatever it is, will finish.'

The labels of the functions are summarized in Table 3. The functions from **a.** to **h.** were taken from Haspelmath (1997); **i.** to **n.** from Aguilar-Guevara et al. (2011); **o.** and **p.** were introduced to label all the examples in our database.¹⁸

¹⁸ In particular, in **o.** *qualsiasi* occurs under the scope of a universal quantifier, strengthening its universal and generalizing meaning. We note that this construction is very marginal and usually considered odd, since *qualsiasi* cannot normally co-occur with a universal quantifier in

As regards the annotation phase, we followed the procedure described in Aguilar-Guevara et al. (2011). If an example was unclear between two readings, we randomly assigned a function between the two. In the case the available readings were greater than two, we labelled the example as *unclear*.

2.2 Distribution

The total number of occurrences and labelled examples is reported in Table 4:

CORPUS	PERIOD	OCCURRENCES	LABELLED
OVI	1000s – 1400s	13	all
M.I.DIA	1200s – 1947	320	all
LIS	1861 – 2001	480	190-random
Corriere della Sera	2000 – 2019	77 900	40-random
			563

Table 4 Occurences & Labelled examples

Figure 3 shows the temporal distribution of the item *qualsiasi* for the occurrences found in our corpora:

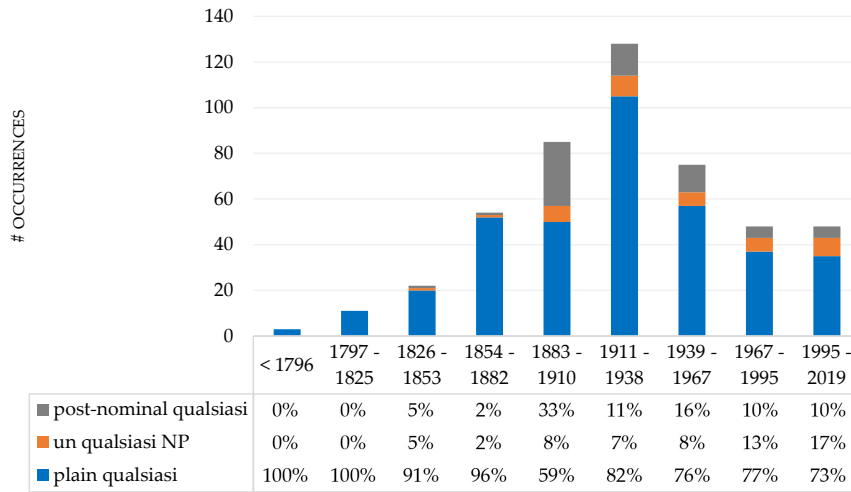


Fig. 3 Distribution for *qualsiasi*

the same nominal structure. The function in p. was used for idiomatic uses of the indefinite (such as the English ‘in any case’).

Crucially, we obtained the above temporal distribution only after the annotation phase, since the year was usually not provided, as explained in Section 2.1. In the chart we followed a division in 28 years, corresponding to half of each 56-years period we considered (see Section 3.1). We observe an unusual peak in the years 1911 – 1938. There might be two reasons for this finding. First, two corpora (M.I.DIA. and LIS) were both considered in this time span, leading to an increment in the number of examples. Second, we might suppose that in these years the texts available were more numerous, given the intuitive fact that the more we go back in the past, the fewer resources we have. Therefore, we decided to consider only a random selection of 60% examples between 1911 – 1938. As a consequence, the whole period 1911 – 1967 presented a more uniform temporal distribution, which is important for a correct evaluation of the diachronic development of our functions. It might be possible that other peaks could be found by looking at shorter intervals of time. In this case, however, we believe that significant language changes cannot occur if the period is not sufficiently extent and therefore a non-uniform distribution should not be problematic.

We also observe that in the interval 1883 – 1910, the post-nominal form showed a significant presence, compared to the pre-nominal one. We do not have an explanation for this fact and we decided to consider all the data. A hypothesis, by looking at the examples, is that this form was used for stylistic purposes in formal writing, but the data we considered is not sufficient to draw any clear conclusion.

The distribution of *qualsisia* and *qual si sia* is depicted in Figure 4:

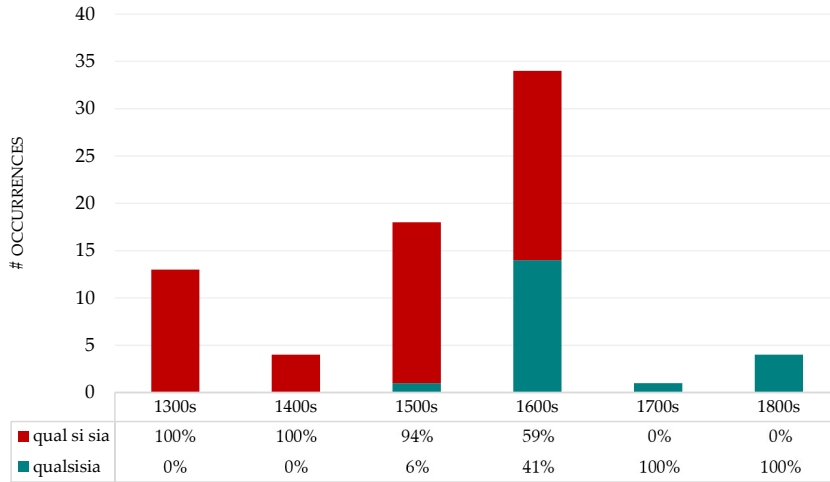


Fig. 4 Distribution for *qualsisia* and *qual si sia*

We observe a peak in the 1300s in the case of *qual si sia*. This is due to the presence of the OVI corpus, which covers only periods before the 14th century.

If only M.I.DIA. had been considered, the number of occurrences in the 1300s and 1400s would have been somewhat similar. Furthermore, the chart shows that these forms essentially disappeared after the 1800s, in line with the predominant diffusion of *qualsiasi*.

3 Results

In this section, we gather the results obtained in the corpus study following the subdivisions introduced before. The database containing all the examples is available in *Comma-separated values* format at the following link: http://bit.ly/data-peer_review.

Our main finding is a link between the *no matter* function and early uses of our item. This relationship was not directly observed in the case of *qualsiasi*. However, in the proclitic form *qualisia*, the *no matter* function was the most prevalent. Furthermore, the original expression *qual si sia* displayed a great prevalence of *no matter* uses before stages of *qual si sia* with a FC meaning. As we will see in Section 4, our results will be particularly useful to reconstruct the emergence of the FC indefinite *qual si sia* and its related forms.

In Section 3.1, we outline the results for *qualsiasi* in its plain form and in combination with *un*. As said, even if our data do not display a clear relationship with *no matter* at this stage, a diachronic examination of *qualsiasi*'s functions is important, given the change in frequency observed in Figure 1, as we point out in Section 3.2. The results for *qualisia* and *qual si sia* are described in Section 3.3 and 3.4 respectively. Given the importance of the early data, we first present here the results of our annotation. Then, we dedicate Section 4 to a thorough examination of the early uses of *qual si sia*.

3.1 *qualsiasi*

The item *qualsiasi* comprised a total of 474 examples, divided in the forms in Table 5.

FORM	OCCURRENCES	PERCENTAGE
plain <i>qualsiasi</i>	370	78.06
un <i>qualsiasi</i> NP	38	8.02
post-nominal <i>qualsiasi</i>	66	13.92
other	2	0.42

Table 5 Form Distribution for *qualsiasi*

Before the end of the 18th century, only 3 occurrences were found in our database (1600 – UFC; 1639 – UFC; 1703 – *no matter*). Starting from the year 1797 we divided our data in 4 periods of 56 years. Since our database comprised different corpora and resources, the examples needed to be uniformly distributed to obtain a coherent interpretation of the results, as explained in Section 2.2.

We will now present the detailed results of the annotated functions for all the forms we considered.

3.1.1 plain *qualsiasi*

From a synchronic point of view, the resulting Haspelmath map is depicted in Figure 5, which was obtained by considering only the examples for *qualsiasi* in the last century.

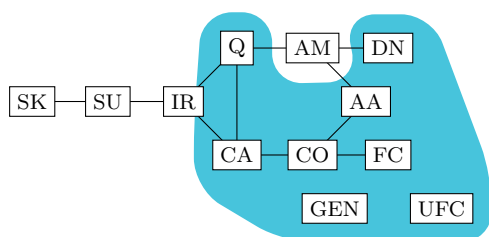


Fig. 5 Haspelmath's map for *qualsiasi* (synchronic)

An important remark concerns the presence of DN (direct negation)¹⁹ and AA (anti-additive) functions.²⁰ These examples were few and we note that these environments normally host negative polarity items (NPIS). A possible explanation might be that a significant number of items in many languages share FC and NP uses, and *qualsiasi* expresses this symmetry in these borderline cases.

Let us now look at the diachronic data following the divisions introduced before.

¹⁹ An example of DN found in our database is the following:

- (10) *Il giornalismo liberale ...non rifugge da qualsiasi contraddizione, neppure*
 The journalism liberal ...not be-averse to QUALSIASI contradiction, not-even
nell' argomento ... (1865)
 in-the topic ...
 'Liberal journalism does not shy away from *any* contradiction, not even in the topic of ...'

We note that this usage of *qualsiasi* is very marked and the indefinite *alcuno*, which can be normally found in negative polarity environments, sounds more natural.

²⁰ Note that DN (direct-negation) differs from both AA (anti-additive) and AM (anti-morphic). The latter were introduced by Aguilar-Guevara et al. (2011) to deal with cases of indirect negation. See Aguilar-Guevara et al. (2011) for some relevant examples.

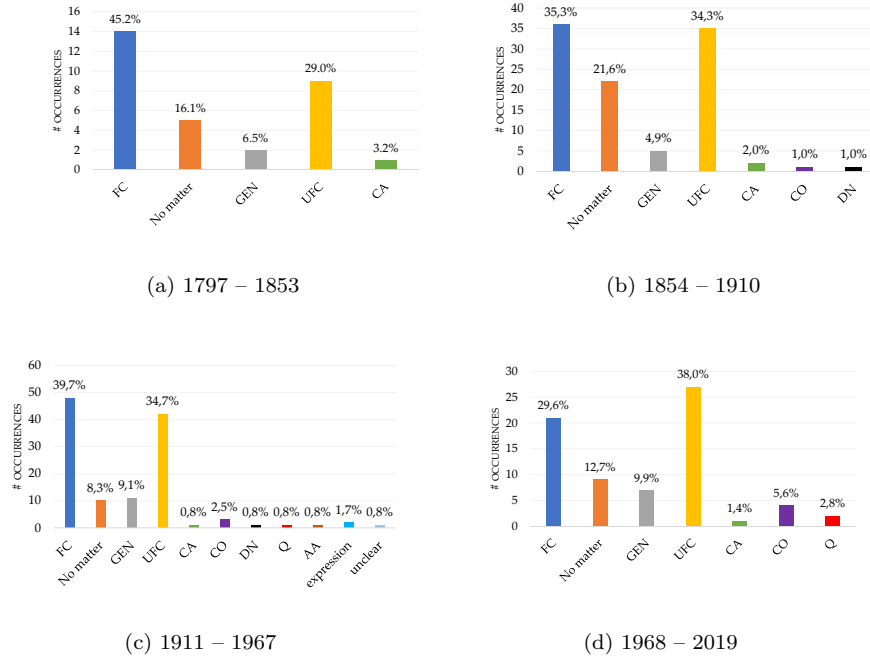


Fig. 6 Results for plain *qualsiasi*

The charts seem to offer no clear conclusion with regard to the grammaticalization of *qualsiasi* as an indefinite, since the first occurrence which we found was already an indefinite with UFC function. Furthermore, *qualsiasi* does not display great variation through the periods considered in Figure 6. In this regard, we attribute the greater variety of functions in periods (b) and (c) to the larger number of occurrences in our database, rather than to an enlargement of the semantic map of *qualsiasi*.

Lastly we note that the *no matter* function occurred with less frequency in the last two periods compared to the first two ones. The data we considered is not sufficient to conclude any statistical significant result, but this tendency should be noted in light of the impact of the *no matter* function in the development of indefinite uses of *qualsiasi* from *qual si sia*, as we will shortly see. Before that, let us briefly look at the case of *un qualsiasi* and post-nominal *qualsiasi*.

3.1.2 *un qualsiasi NP*

Syncronically, we obtained the following Haspelmath map for this form, where the functions in bold were not found in the database, but considered relevant by native speakers:

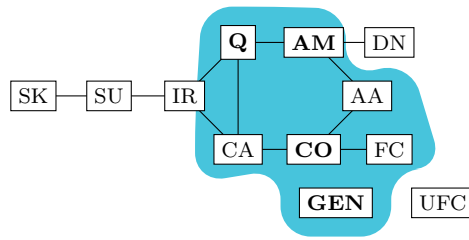
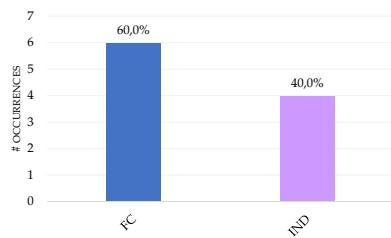
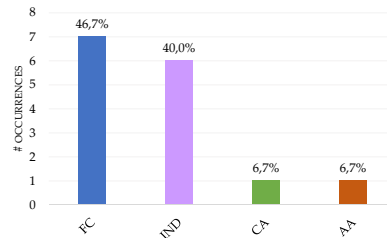


Fig. 7 Haspelmath's map for *un qualsiasi* NP (synchronic)

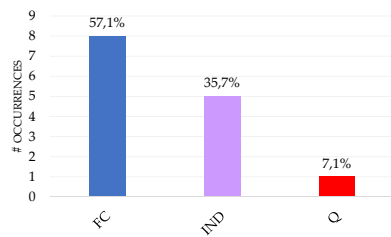
Diachronically, the distribution of the functions is reported below. It shows that the two main functions for the form *un qualsiasi* NP were FC and IND. In particular, with the exception of the last period considered, the FC function displayed a slight prevalence overall.



(a) 1842 – 1910



(b) 1911 – 1967



(c) 1968 – 2019

Fig. 8 Diachronic results *un qualsiasi* NP

3.1.3 post-nominal *qualsiasi*

For the post-nominal case, the Haspelmath map looks like the following:

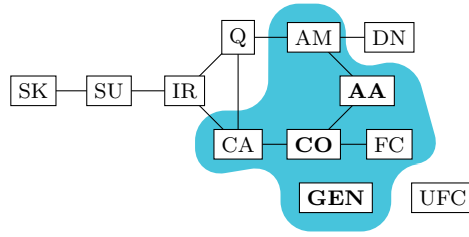


Fig. 9 Haspelmath's map for post-nominal *qualsiasi*

Diachronically, the same considerations of the form *un qualsiasi* NP seem to apply. We note, however, that in this case we observe a prevalence of the IND function over the FC one²¹:



Fig. 10 Results for post-nominal *qualsiasi*

3.2 Interim Conclusion

We have examined the diachronic distribution of *qualsiasi* and its combination with the indefinite article *un* between the end of the 1700s and the year 2019.

²¹ This might be explained by the syntactic position of modifiers in the Italian language, which tend to prefer post-nominal positions for IND-related uses.

We have observed no clear changes in their functional distribution. Even if the data does not show any clear pattern, these results provide an answer to one of the motivating questions of our diachronic study. In Section 1.2 we noted that starting from the mid of 1900s *qualsiasi* became the most widespread indefinite in the Italian language. The charts in Figure 6 show that this change in *frequency* did not have a significant impact on the distribution of the *functions* of our indefinite, contrary to what one might have expected.

We also note that based on our data the form *un + qualsiasi* is only available starting from the mid of 1800s. Crucially, this seems to coincide with the rising diffusion of *qualsiasi* (see frequency graph in Figure 1). We conjecture that once *qualsiasi* started to become more common and somehow recognized as an indefinite determiner by the grammar, the combination with *un* became available by mirroring the behaviour of other FC indefinites (e.g. *un qualunque*).²²

We will now proceed to outline the results for the proclitic form *qualsiasi* and the whole expression *qual si sia*.

3.3 *qualisia*

The first occurrence of *qualisia* in our database dates back to the year 1586 and the presence of *qualisia* is predominant in the 17th century, with just one example in the 18th (1751 – CO) and only few in the 19th (1800 – DN; 1827 – GEN; 1836 – UFC; 1870 – IND). As regards the form *un qualisia* NP, two examples were found and they both occurred in 1620 with the IND function. The post-nominal form was not observed.

Let us now focus on the period 1586 – 1699. A total of 13 occurrences were found with the following distribution:

²² The availability of FC indefinites together with an indefinite article is quite typical in Romance languages and a similar construction with a numeral can already be found in Latin (e.g. *unus-quivis*, lit ‘one any’).

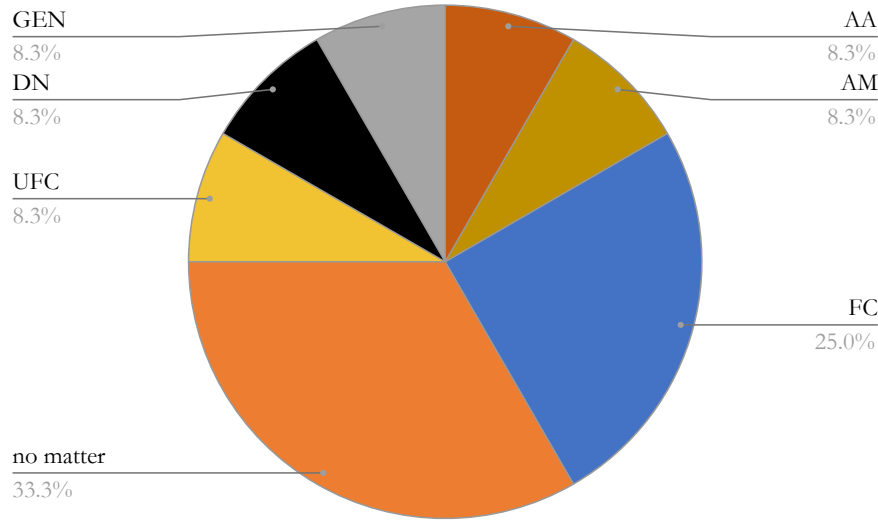


Fig. 11 Results for *qualsisia* – 1600s

As shown in Figure 11, the predominate function is *no matter*. This is in clear contrast with the results of *qualsiasi*, where the *no matter* function was never the most prevalent. As a result, we hypothesize that *qualsisia* originated from *no matter* uses, and then acquired an indefinite status by a process of grammaticalization. However, even in this case, *qualsisia* is already used as an indefinite since its first occurrences. To support our claim, we will proceed with an analysis of *qual si sia*, the expression from which *qualsisia* was formed by a morphological process of compounding.

3.4 *qual si sia*

Our database included a total of 55 examples temporally distributed between the 14th century and the 17th one. We divided our data in periods of one century each. With particular regard to the functions of this expression, the results are summarized in Figure 12, where the *wh*-embedded label was used for indirect interrogative clauses like (2).

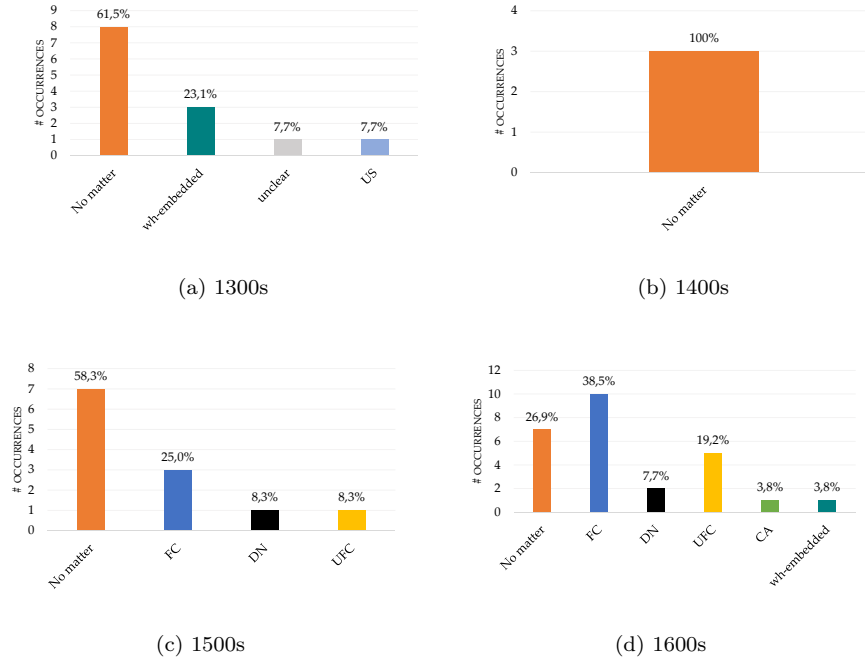


Fig. 12 Results for *qual si sia*

The charts clearly show that the *no matter* function is predominant in early uses of *qual si sia* and only in a later stage indefinite uses were possible. This might support our hypothesis that FC originated from *no matter* uses. We will dedicate the next section to this conclusion and to its implications for semantic theories of FC. Moreover, we will also analyze the data by taking into considerations the different configurations of the *no matter* function. As we will see, this will enable us to reconstruct the emergence of FC uses of *qualsiasi*.

4 The Emergence of FC *qual si sia*

In this section, we will try to reconstruct how *qual si sia* developed into a FC item. As Figure 12 shows, in our diachronic study we found three main different constructions in which *qual si sia* appeared:

1. EMBEDDED *wh*-CLAUSE:

- (11) Io non so QUAL SI SIA il vostro intendimento, ma il
 I not know what CLITIC is.SUBJ the your reason, but the
 mio è di morir combattendo.
 mine is to die fighting.
 ‘I do not know what your intention is, but mine is to die fighting’
 (Boccaccio, *Filocolo*, 1336)

2. NO MATTER:

- (12) QUAL SI SIA la cagione, oggi poche o non niuna donna
 What CLITIC is.SUBJ the reason, today few or not no-one women
 rimasa ci è la qual ...
 left to-us is the who ...
 ‘Whatever the cause is, today few or no women left is such that ...’
 (Boccaccio, *Decameron VI: 1-10*, 1353)

3. FC INDEFINITE:

- (13) i quali sì timorosamente mostrano di dire le openioni sopra
 the who so timidly show to say the opinions on
 QUAL SI SIA proposta.
 what CLITIC is.SUBJ proposal.
 ‘who so timidly show that they say their opinions on any proposal.’
 (Della Casa, *Galateo ovvero de’ costumi*, 1558)

Moreover, after the first *no matter* uses, *qual si sia* started to also appear between two commas both before and after the relevant noun, as in (14a) and (14b) respectively. The associated reading was still *no matter*, but the nominal expression present in standard *no matter* cases was omitted. We analyze this kind of parenthetical constructions as *appositions*:

(14) APPPOSITION

- a. or, QUAL SI SIA, vinca pietá la mia stolta follia.
 now, what CLITIC is.SUBJ, win pity the my foolish madness.
 ‘Now, whatever it is, may pity win my foolish madness.’
 (Serdini, *Rime*, 1390)
- b. Di ciascheduna carrata di legname, QUAL SI SIA, danari 12.
 of each cartload of lumber, what CLITIC is.SUBJ, denari 12.
 ‘Of each cartload of lumber, whatever it is, 12 denari.’
 (Morrocchesi, *Stat. fior.*, 1394)

In the following section, we will delineate a more accurate description of each construction (*wh*-embedded, *no matter*, apposition), illustrating how *qual si sia* finally developed into a FC indefinite.

conditional mood of *vorremo*. Lastly, we note that the construction in (15a) is no longer possible, and the indefinite *qualsiasi* is now required, as in (15b).

In general, we observe that the meaning of an unconditional resembles very closely the free choice reading typically associated with *qualsiasi*. It might not be unreasonable to regard this particular construction as the origin of FC in the case of *qualsiasi*. In Section 5, we will see how this idea might be implemented in a specific semantic framework. Before that, let us concentrate on another subtype of *no matter* uses: appositional constructions.

4.3 Apposition

In our database we found an additional configuration, where *qual si sia* occurred alone between two commas, as in (14). The latter started to appear after the first *no matter* uses, and for a certain period of time, it was used concurrently with plain *no matter* cases. After the development of the full FC indefinite, no examples were found in the corpora we examined. In this kind of construction, our item covertly refers to a DP in the main clause. For instance, in the case of (14b), we would have something along the lines of (16):

- (16) Di ciascheduna carrata di legname, QUAL SI SIA ~~la carrata di legname~~,
danari 12.
'Of each cartload of lumber, whatever ~~the cartload of lumber~~ is, 12 denari.'

The presence of the two commas suggests that the expression *qual si sia* in (16) might be considered an appositional construction, interpreted at a different level than the main clause. To see this, consider the toy example in (17):

- (17) a. John, the postman, is in the garden.
b. At-issue content: John is in the garden.
c. Non at-issue content: John is the postman.

For a nominal apposition like (17), Potts (2005) argues that the content of the main clause is at-issue, while the one expressed by the appositional construction is non at-issue and it is computed by a specific comma operator.²³ In a similar way, we claim that the appositional stage of *qual si sia* is interpreted at a different level than the main clause. The resulting non at-issue content, in this case, has a no-matter meaning similar to the unconditional case we discussed before:

- (18) a. A letter, *qual si sia*, is on the table.
b. At-issue content: A letter is on the table.
c. Non at-issue content: It does not matter which letter (is on the table).

²³ Potts (2005) uses the notion of *conventional implicature* to refer to the non at-issue content of a sentence. In the present paper, we will use the more neutral term 'non at-issue content', highlighting the asymmetry between the two content levels.

For a sentence like (18a), the at-issue content in (18b) expresses the fact that there is a letter on the table, while the non at-issue content in (18c) conveys that it does not matter which particular letter is on the table. We would like to underline that the contribution of *qual si sia* is considered to be non at-issue because, broadly speaking, it is not the main point of the utterance. A common diagnostic for determining the (non) at-issue content of an utterance is by analyzing a possible assent/dissent continuation. In the case of (18a), if the addressee continues with ‘Yes, that’s true’ or with ‘No, that’s not true’, she wants to claim that the letter is or is not on the table, but her assent or dissent does not concern the meaning expressed in (18c).²⁴ It is the contribution of the apposition *qual si sia* which gives rise to the non at-issue content in (18c), signaling that it does not matter which letter is on the table. In particular, a possible way to capture such enriched meaning would be to analyze the apposition as a hidden unconditional clause of the form ‘*qual si sia* the letter, it is in on the table’, with the second part elided, along the lines of (16).

In our database, the first occurrences of *qual si sia* in an unconditional construction are temporally located in the early/middle 13th century. After approximately half a century (late 13th century), appositional constructions started to emerge.²⁵ A natural question, in this regard, is why speakers started to express the *no matter* function with an appositional construction and not with a full unconditional structure. We might conjecture that, when the use of *qual si sia* as an unconditional became more widespread and typical, ease of communication induced speakers to use a more concise formulation to express the same claim.

We suppose that this appositional construction acted as an intermediate configuration between standard *no matter* and indefinite uses, and facilitated the integration of the FC meaning at the nominal level.²⁶ Indeed, we conjecture that it is here that the generalizing reading of *no matter* constructions got reinterpreted in the meaning of the indefinite. In this regard, we note that a similar construction can be found in the emergence of the Dutch free choice item *wie dan ook* (see Aguilar-Guevara et al., 2011; de Vos, 2010).²⁷ As a result, our hypothesis that the Italian *qual si sia* went through such stage, besides being empirically attested, is also supported by other grammaticalized FC indefinites.

4.4 Free choice Indefinite

Two centuries after the first *no matter* uses, *qual si sia* started to be used as a FC indefinite. Structurally, we observe that the first form was *qual si sia*. After a com-

²⁴ For further diagnostics on ‘at-issue vs non at-issue content’, see Tonhauser (2012).

²⁵ It is of course difficult to prove whether this observation is due to the scarcity of the data or not. However, we observe that other unconditional uses of *qual* + clitic + subjunctive of *to be* were possible (see Section 1.2), but no appositional constructions of these forms were found.

²⁶ It is important to underline that, from a semantic point of view, our item undergoes a type shift from an unconditional construction (where *qual* is a separate argument of *sia* together with its predicative complement) to a full determiner. We believe that multidimensional semantic approaches, which can distinguish between different content levels, might provide useful insights in this regard. In this way, the appositional stage can be seen as an intermediate context where different type shifting rules between different content levels can apply. Given the descriptive nature of this article, we leave this issue for further work.

²⁷ A relevant example might be following:

petition period between the proclitic form *qualsisia* and the enclitic one *qualsiasi*, only the latter survived. As already noted, while the plural form *qualsisiano* was originally possible, the plural form was no longer available when *qualsiasi* became fully integrated in the grammar.

We end this section with an important remark concerning the co-occurrence of *qual si sia* with a series of disjunctions. The examples in (20a) and (20b) are two relevant representatives:

- (20) a. *a tanti gradi di ostro, o syroco, o qual si sia.*
to many degrees of Ostro, or Sirocco, or whatever.
(Raffaello Sanzio, *Letter to Pope Leo X*, 1519)
- b. ...*che ò sia per la semplicità della sua fabrica, ò perche*
that or is for the simplicity of-the its craftsmanship, or because
s'adoperi cō molta facilità, ò per qual si sia altro rispetto,
it-uses with very facility, or for qual si sia other respect,
l'habbia trovato più idoneo.
it-have found more suitable.
that, or for the simplicity of its craftsmanship, or because it can be
used very easily, or for any other respect, I have found it more suitable.
(Maurizio Oddi, *Dello Squadro*, 1625)

Our data does not show that this construction is crucial in the development of *qual si sia*, since these examples occur after the first FC uses, and similar cases are also possible in current Italian with the full indefinite *qualsiasi*. However, we note that a similar parallelism between disjunction and free choice can be found in the development of other indefinites. The example in (21), from the corpus study of Aguilar-Guevara et al. (2011), illustrates the case of the Dutch *wie dan ook* and the one in (22), from the work of Company Company (2016), the Spanish *cualquier(a)*:

- (21) *hij zij Keizer of Koning of wie dan ook.*
he be:SING.IMP. Emperor or King or whoever.
'be he the Emperor or the King or whoever.'
(Het vrijhandel - congres te Brussel, 1856)

- (19) Dutch *wie dan ook* (apposition)
hij had, dunkt ons, handwerksman of winkelier, **wie dan ook**, mits
he had, it-seems us, craftsman or shopkeeper, who then also, provided-that
hij zich vrij ontwikkelde, de voorkeur gegeven
he himself free developed, the preference given.
'he would have preferred, we think, craftsman or shopkeeper, whoever, provided he developed freely.'
(De Gids 1844, p. 225)

- (22) *o con fuego, o con rescoldo, o con fierro caliente, o en otra*
 or with fire, or with embers, or with iron hot, or in other
manera cualquier.
 way whichever.

‘or with fire, or with embers, or with hot iron, or in any other way.’

(Fernando de Córdoba, *La suma de la flor de cirugía*, 1400s)

This kind of disjunctive constructions might have constituted an intermediate context where FC got consolidated: any of the people or objects the indefinite stands for would be sufficient to satisfy the purposes the speakers are considering as a possible disjunct.

We observe that the example in (20a), as well as the Dutch case in (21), seems closer to the appositional construction we examined before, with an additional prepositional phrase triggering the apposition. By contrast, in the example in (20b) and in the Spanish one in (22) our items associate with a noun. It might also be possible that this environment facilitated the development of an indefinite determiner status of *qual si sia* from an appositional stage, where it was computed at a different content level, to a position outside the appositional boundaries and directly computed in the matrix clause.²⁸

5 Semantic Analyses of FC

In this section we will examine how our diachronic data is compatible with current semantic analyses of FC. We will first start with some desiderata which any semantic theory of FC should account for. Then, we will take into consideration two different semantic frameworks: Alternative Semantics accounts for indefinites (e.g. Kratzer and Shimoyama, 2002) and grammatical approaches to implicatures (e.g. Chierchia, 2013). By doing so, we will try to illustrate how our diachronic investigation might shed some light on these analyses. Given the purposes of this paper, we will not focus on the technical details behind these semantic analyses. Instead, we hope that the non-initiated reader will be able to grasp the main building blocks of these accounts and thus better appreciate the role that diachronic data might have in evaluating these theories.

Semantic analyses of FC should be able to account for three main facts. First, as outlined in the introduction, indefinites display a great quantificational and functional variability. A proper account of FC should be embedded within a *general theory* of indefinites which explains their differences. Second, FC indefinites display a clear *universal character*, even if they cannot be considered universal quantifiers (see Menéndez-Benito, 2010). Lastly, FC items are usually associated with a particular *restricted distribution*.²⁹ For instance, they are normally infelicitous in episodic statements, but fine under possibility modals. To see this, consider the contrast below. While (23a) is ungrammatical, a similar construction with the modal *can* in (23b) is fine:

²⁸ As already noted, the limited number of examples makes it difficult to assess the importance of this alleged bridging stage. But the parallelism with other languages is worth noticing.

²⁹ For an overview, see Dayal (2013).

- (23) a. *Anyone sang.
b. Anyone can sing.

One of the main challenges of semantic theories of FC is to arrive to an account of the universal meaning of FC indefinites which also explains their restricted distribution.

5.1 Alternative Semantics accounts of indefinites

5.1.1 Outline

Alternative Semantics has its roots in Hamblin (1973), who proposed an extension of the basic type-theoretic framework commonly used in formal semantics in order to provide an account of questions. In Alternative Semantics, the meaning a sentence is not captured by a single proposition, but rather by a set of propositions (a set of *alternatives*). Within the framework of Alternative Semantics, Kratzer and Shimoyama (2002) presents an elegant account of the variety of indefinite forms: their common core is their potential to induce a set of propositional alternatives and their differences derive from their necessary association with different operations of propositional quantification.³⁰

More formally, in this alternative based account all expressions denote sets. Most lexical items denote singleton sets, while indefinites and *wh*-phrases denote (multimembered) sets of individual alternatives. The generated alternatives keep expanding by point-wise functional application to create propositional alternatives.^{31, 32} For instance, in the case of (24a), the corresponding set of propositions will be:³³

- (24) a. sing(anyone/someone/who/...)
b.

\emptyset sings	d_1 sings	d_2 sings	...
-------------------	-------------	-------------	-----

³⁰ It should be noted that Alternative Semantics comprises many frameworks with a variety of applications, which all originated from the original account by Hamblin (1973) (e.g. Rooth (1992)'s theory of focus interpretation, Alonso-Ovalle (2006)'s account of conditionals). In this work, with the label Alternative Semantics, we specifically refer to theories of Alternative Semantics for *indefinites* (e.g. Kratzer and Shimoyama, 2002; Menéndez-Benito, 2005; Aloni, 2007; Menéndez-Benito, 2010).

³¹ Note that the original account of Kratzer and Shimoyama (2002) includes also quantifiers over individual alternatives. If the alternatives introduced by an indefinite are caught by one of these quantifiers, the alternatives will not 'grow propositional.' This possibility is exploited by Menéndez-Benito (2005, 2010) to account for the licensing of 'any' in generic statements.

³² Technically, the framework of Alternative Semantics assumed here faces a number of well-known problems when it comes to meaning composition (see e.g. Shan, 2004). Various solutions have been proposed, including the inquisitive one defended by Ciardelli et al. (2018). The analysis presented in this paper can be easily reformulated in an inquisitive semantics setting by implementing the relevant abstract operators. Given that the technicalities of meaning composition are not the main concern of this paper, we will use the Alternative Semantics formulations, which are easier to parse for a non technically-oriented reader.

³³ For technical reasons, we include the empty alternative \emptyset in our domain of individuals. See Aloni (2007) for details.

These alternatives keep growing until they are closed by an operator, responsible for their quantificational force. Adapting from Kratzer and Shimoyama (2002), we consider the following operators:

(25) OPERATORS

Let W be our logical space and $A \subseteq \wp(W)$ a set of propositional alternatives:

- a. $[\exists](A) = \bigcup(A)$
- b. $[\forall](A) = \bigcap(A)$
- c. $[\text{Neg}](A) = W \setminus \bigcup(A)$
- d. $[Q](A) = A$

As said, this is how Alternative Semantics analyses based on Kratzer and Shimoyama (2002) capture the quantificational variability between indefinite expressions: different indefinites can associate with different operators, while their core semantic meaning is their alternative-inducing behaviour. Following Menéndez-Benito (2005); Aloni (2007), we assume that the quantificational force of the alternatives generated by FC items is given by the $[\forall]$ operator, which instructs all alternatives to be true.

In addition, as originally showed by Menéndez-Benito (2005), these alternatives need to be mutually exclusive with each other.³⁴ In the following, we will indicate this mutual exclusiveness with an operation of propositional exhaustification and we will indicate the latter with **exh**. We also assume that exhaustification leads to a logical partition, as in the representation between brackets in (26c). In practice, some of these exhaustified alternatives are often eliminated due to some existential or uniqueness presuppositions.³⁵ Exhaustification also explains why a plain episodic statement like (24a) gives rise to a contradiction and it is normally considered infelicitous:

(26) a. *Anyone sang.

- b. $[\forall](\text{exh}(\text{anyone sang}))$

$$\text{c. } [\forall] \left(\begin{array}{|c|} \hline \text{nobody sing} \\ \hline \text{only } d_1 \text{ sing} \\ \hline \text{only } d_2 \text{ sing} \\ \hline \text{only } d_1 \& d_2 \text{ sing} \\ \hline \dots \\ \hline \end{array} \right) = \perp$$

By contrast, the intervention of a possibility modal like *can* rescues the alternatives from contradictions. The resulting reading is the desired one, where each alternative is possibly true:

³⁴ See in particular the Canasta example in Menéndez-Benito (2010, 36–37).

³⁵ For the role of the exhaustification operator in the treatment of FC indefinites, see in particular Menéndez-Benito (2005). Exhaustification can also apply at a different, non-propositional, level. See Aloni (2007) for an alternative account, which also discusses the need of partitions and related phenomena. Common presuppositions are existence ones, which exclude the empty alternative, and uniqueness ones, which exclude the ‘plural’ alternatives (e.g. $d_1 \& d_2$).

- (27) a. Anyone can sing.
 b. $[\forall](\Diamond((\mathbf{exh}(\text{anyone sing}))))$
 c. $[\forall] \left(\begin{array}{|c|} \hline \Diamond \text{ nobody sang} \\ \hline \Diamond \text{ only } d_1 \text{ sing} \\ \hline \Diamond \text{ only } d_2 \text{ sing} \\ \hline \Diamond \text{ only } d_1 \& d_2 \text{ sing} \\ \hline \dots \\ \hline \end{array} \right)$

We note that the Alternative Semantics framework presented here can be generalized to account for subtrigging configurations (Aloni, 2007), for intervention effects (Kratzer, 2005), for indefinites in comparatives (Aloni and Roelofsen, 2014), and it has also been empirically successful in describing the meaning of *FC* indefinites in a variety of languages.³⁶

One fundamental question which remains unexplained is why, in principle, *FC* indefinites need to associate with a $[\forall]$ universal operator and why they generate exhaustive alternatives. In the next section, we will see how diachronic data might provide an answer to these issues.

5.1.2 *Wh-embedded clauses*

As said, in the alternative based account outlined before *wh*-words and indefinites give both rise to sets of alternatives. This assumption is compatible with our data. As we noted, *qual* is an interrogative word and the first uses of *qual si sia* were indirect interrogative clauses, like the one we encountered in (11)³⁷. Indirect interrogative clauses can be easily implemented in alternative semantics frameworks by means of specific propositional attitude operators:³⁸

- (28) a. I do not know *qual si sia* your intention.
 b. I do not know what your intention is.
 c. $\neg Bel_I [\text{TRUE}] [Q] (\mathbf{exh}(\text{qual}(\text{si}), \text{is your intention}))$
 d. $\neg Bel_I [\text{TRUE}] \left(\begin{array}{|c|} \hline \emptyset \text{ is your intention} \\ \hline \text{only } d_1 \text{ is your intention} \\ \hline \text{only } d_2 \text{ is your intention} \\ \hline \dots \\ \hline \end{array} \right)$

In (28), we adopt the formalization of Aloni (2007, ex. (38)-(39)), which models *know* as a combination of *believe* and a $[\text{TRUE}]$ operator.³⁹ In particular, the indefinite *qual* generates a set of alternatives which combine with the verb *sia* and with

³⁶ See e.g. Kratzer (2005) for German, Menéndez-Benito (2005) for Spanish, Aloni (2007) for Italian, Kim and Kaufmann (2007) for Korean.

³⁷ In this sense, we can also understand why a *wh*-indefinite like *qualsiasi* naturally triggers sets of alternatives in the recursive computation of meaning.

³⁸ See e.g. Groenendijk and Stokhof (1984); Aloni (2007); Ciardelli et al. (2018).

³⁹ In the formalization in (28), we modelled the sentential negative marker *non* with \neg , since we are dealing with a singleton set of alternatives. In general, it is of course important to examine appropriately the relationship between sentential negation and explicit negative markers in indefinites.

its predicative complement *your intention*.⁴⁰ After exhaustification⁴¹, these alternatives are selected by $[Q]$ which avoids existential closure, which would otherwise occur as default, and signals that we are dealing with a question. The $[TRUE]$ operator selects the unique true exhaustive proposition (i.e. the true answer) in the set of alternatives, capturing the factive aspect of knowledge verbs. The resulting reading is the desired one: it is not the case that the agent believes the unique true answer to the question ‘what is your intention?’.

Setting aside the specific implementation of indirect interrogative clauses, we note that at this stage the *wh*-element *qual* is simply associated with $[Q]$ and does not display any particular integration with *si sia*.

5.1.3 Unconditionals

We have already noted that the free choice meaning of FC indefinites resembles very closely the generalizing reading typical of unconditionals. In this section, we will show how this latter reading is implemented in Alternative Semantics accounts of unconditionals and how this might be related to FC indefinites.⁴²

For ease of readability, we will now work with the toy example in (29) and then we will point out the particularities of the Italian case.

- (29) a. Whatever the gift is, I will be happy.
b. *Qual si sia* the gift, I will be happy.

Since the first studies on unconditionals (see e.g. König, 1986)⁴³, a strong parallelism between standard ‘if’ clauses and unconditionals has been noted. The underlying idea is that an unconditional expresses a set of conditional claims. However, unlike canonical ‘if’ clauses, unconditionals often display the following crucial features:

- (a) they are associated with an ‘indifference’ flavour (i.e. in (29) it does not matter which gift is);
- (b) the main sentence of an unconditional is entailed by the whole construction. By contrast, a standard ‘if’-clause expresses a claim that holds only if the conditional antecedent is satisfied.

Intuitively, unconditionals involve some sort of universal quantification over epistemic alternatives, as several analyses of ‘whatever’ constructions usually assume (see e.g. Dayal, 1997; Von Stechow, 2000). Indeed, while the conditional adjunct of standard ‘if’-clauses can be bound by a variety of operators which can determine their quantificational force (Lewis, 1975; Kratzer, 1986), unconditionals seem to prefer operators with a quasi-universal or generic meaning (e.g. adverbs like *always*

⁴⁰ As noted in Section 1.2, *si* is a clitic and it is essentially semantically vacuous. Its emphatic use, however, might be due to a domain widening effect, as we speculate later when we analyze its contribution in unconditionals.

⁴¹ We are assuming that questions denote partitions of the logical space.

⁴² The original idea of a parallel account between unconditionals and free choice in an Alternative Semantics framework can be found in Aloni (2017).

⁴³ For a recent work, trying to establish a connection between König (1986)’s early intuitions and the relationship between concessivity and epistemic modality, see Baranzini and Mari (2019).

or *almost*, but not *sometimes* or *once*).⁴⁴ According to Rawlins (2008b,a) unconditionals adjuncts should be treated as interrogative structures⁴⁵, leading to the emergence of exhaustified alternatives in the same spirit of the Alternative Semantics framework introduced above. As a result, a sentence like (29) is really a set of conditional claims:⁴⁶

- (30) a. *Qual si sia* the gift, I will be happy.
 b. $[\forall] ([Q] \text{exh} (\text{qual} (\text{si}), \text{is the gift}) \Rightarrow \text{I will be happy})$
 c. $[\forall] \left(\begin{array}{|c|} \hline \emptyset \text{ is the gift} \\ \hline \text{only } d_1 \text{ is the gift} \\ \hline \text{only } d_2 \text{ is the gift} \\ \hline \dots \\ \hline \end{array} \Rightarrow \text{I will be happy} \right)$

In (30), \Rightarrow stands for a conditional operator which takes the content of the conditional adjunct and based on the latter it restricts the domain of its scope (i.e. the consequent ‘I will be happy’).⁴⁷ Due to the inherent universal character of unconditionals, each alternative acts as a restrictor on the main clause. This can be captured by a universal operator $[\forall]$ which puts together the set of conditionalized propositions by instructing that all of them are true.⁴⁸

Since the alternatives in (30) denote a partition of the logical space, the main clause is entailed, as we should expect in this kind of unconditional constructions. Moreover, this analysis accounts for the ‘indifference’ flavour of *no matter* constructions, since all the alternatives act as a restrictor to the main clause, leading to the interpretation that ‘it does not matter which gift is, I will be happy anyways’. Furthermore, the presence of the English adverb *ever* widens the domain of individuals under consideration, strengthening the generalizing or indifference

⁴⁴ See also Rawlins (2008a, pp. 88–91) for a discussion of the universal character of unconditionals. For the universal force of conditionals in general, see in particular Alonso-Ovalle (2006, 2009), where the interpretation of conditionals involves a universal quantifier ranging over propositions.

⁴⁵ Rawlins’ claim is quite strong: all unconditionals adjuncts are interrogative structures. This has been disputed (see e.g. AnderBois, 2015). In any case, the Italian unconditional structure we are considering is formed by a transparent *wh*-phrase. Again the operator $[Q]$ is needed to avoid the existential closure of the adjunct of the unconditional, as said when dealing with *wh*-embedded clauses above. See also Ciardelli (2016) for an inquisitive account of (un)conditionals.

⁴⁶ In Rawlins’s theory exhaustification takes place in the question operator. The claim that exhaustification is not obligatory triggered by *wh*-elements in *wh*-phrases, but at a different level, is not new. See e.g. Li (1995) for the role of the Mandarin particle *dou* in this regard.

⁴⁷ The lexical entry for all these operators are given in Rawlins (2008a, 2013). Similarly, other technicalities to make the framework compositional are discussed in Rawlins (2008a, 2013)’s work.

⁴⁸ A reviewer wonders how this analysis of unconditionals might be extended to deal with plurals (e.g. ‘whatever the gifts are, ...’ and what the role of exhaustification would be in this case. We would no longer get a partition of the logical space (the singleton sets are no longer there), but only a set of mutually exclusive propositions. To still get the effect that the consequent is always true we could assume that the exclusion of the singletons is a presupposition. Alternatively, we could push the idea that the partition is still there. In particular, plurals in questions (as in ‘Which students did you meet? Only Maria.’) induce an expectation of plurality (therefore the presence of ‘only’) but a singular answer is still a possible semantic answer.

reading outlined above.⁴⁹ In the Italian case *qual si sia*⁵⁰, there is no ‘ever’ equivalent. However, we note that here the alternatives generated by the *wh*-element *qual* combine with the ontologically most general and neutral verb (*to be*) with an intensifier particle (*si*) and in subjective mood, which is an irrealis mood conveying open possibility. Based on these considerations, we can also understand why this particular verbal form together with *qual* ultimately grammaticalized in a *free choice* indefinite.⁵¹

It is important to note that in (30), *qual*, together with *si sia*, is still associated with a $[Q]$ operator, given the interrogative nature of unconditional adjuncts. Then a universal operator $[\forall]$ applies on top of the conditionalized alternatives. By contrast, in the case of FC indefinites, as in (27a), $[Q]$ is not present anymore and the alternatives are directly associated with $[\forall]$.

5.1.4 Conclusion

Let us now recap what we have discussed so far. In an Alternative Semantics account, unconditionals are a set of conditionalized propositional alternatives bounded by a universal $[\forall]$ operator. A free choice indefinite was analyzed as set of exhaustified propositional alternatives which were conventionally associated with the $[\forall]$ operator. Based on our analysis, the diachronic development of *qual si sia*, and consequently its compound form *qualsiasi*, can be described as follows:

- (i) WH-EMBEDDED CLAUSE
 - a. I do not know *qual si sia* your intention
 - b. $\neg Bel_I [TRUE] [Q] (\text{exh}(\text{qual}(\text{si}), \text{is your intention}))$
- (ii) UNCONDITIONAL
 - a. *Qual si sia* the gift, I will be happy.
 - b. $[\forall] ([Q] \text{exh} (\text{qual} (\text{si}), \text{is the gift}) \Rightarrow \text{I will be happy})$
- (iii) FC INDEFINITE
 - a. *Qual si sia* person can sing.
 - b. $[\forall](\Diamond((\text{exh}(((\text{qual si sia}, \text{person}), \text{sing}))))))$

In step (i), the alternatives are introduced by the bare *wh*-indefinite *qual*. These alternatives associate with $[Q]$ to avoid existential closure, and with an operator of exhaustification. The unconditional stage in step (ii) still involves an interrogative construction in the adjunct of the unconditional. As explained before, due to a conditional operator, this set of alternatives acts as a restrictor on the main clause. On top of these, a universal operator $[\forall]$ puts together the set of conditionalized alternatives and makes all of them true, leading to the desired reading. In stage

⁴⁹ The role of domain widening in FC has been central since the work of Kadmon and Landman (1993). See Rawlins (2008a, ch. 4.3) for some ideas on how to implement domain widening in an Alternative Semantics framework.

⁵⁰ See Section 1.2. Note however that in Italian, *qualunque* can also be used in such unconditional constructions, which has an *ever*-equivalent (see Table 1).

⁵¹ Even though Bledin (2018) argues against the idea that the main sentence is always entailed.

(iii), the alternatives are generated directly by the FC indefinite *qual si sia*, which is conventionally associated with a universal $[\forall]$ operator and the exhaustification operator **exh**.

Appositional construction, which might be analyzed as unconditionals expressed at a different content level, might have facilitated the change from step (ii) to step (iii), as we said earlier⁵², by acting as a bridging phase between unconditional uses and the determiner status of *qualsiasi*. The Italian unconditional structure which we have examined has an inherent universal force and an exhaustive interpretation. By adopting an appositional construction, speakers started to associate the whole unconditional construction with the expression *qual si sia*. Then, *qual si sia* escaped the appositional boundaries, and completed its grammaticalization process.

Based on these diachronic considerations, it is reasonable to assume that the FC indefinite *qualsiasi* is conventionally associated with a universal propositional operator and with an exhaustive interpretation.

If this analysis is correct, it would predict that FC indefinites need to acquire their universality from a stage of language with a clear universal interpretation.⁵³ In this regard, Aloni (2017) showed that similar stages can be found for the case of the Spanish *cualquier(a)*, which emerged from a universally read free relative construction, and the Dutch *wie dan ook*, which was initially associated with an unconditional construction similar to the one examined in the present work.

It might be possible that other languages do not display an early stage which motivates the need of a universal operator. Such language would constitute a counterexample to our generalization, since the meaning of FC could not be derived from an alleged universal operator. An example might be the case of the German *irgendein*, which comes from a locative particle and did not display a clear universal stage in its development (see Jäger, 2008; Port and Aloni, 2015). Crucially, Alternative Semantics analyses of *irgendein* (e.g. Kratzer and Shimoyama, 2002) associate the latter with an $[\exists]$ operator and derive its FC meaning by a pragmatic inference due to domain widening. On the one hand, this shows that our $[\forall]$ -prediction is potentially falsifiable based on the different diachronic developments of FC indefinites. On the other hand, the possibility to account for different diachronic paths by offering a pluralistic treatment of FC indefinites which is tied to their diachronic development is what makes the Alternative Semantics approach particularly attractive.

Lastly, we note that our account fits very well with recent observations made by Beck (2017, 2020) about the diachronic semantic development of universal quantifiers.⁵⁴ According to Beck (2017), based on previous observations by Haspelmath (1997), universal quantifiers might emerge from so-called free choice relative clauses. The latter are analyzed in an alternative based account similar to our treatment of unconditionals outlined before (i.e. universal quantification over propositions). Crucially, Haspelmath (1997) also notes that some FC indefinites themselves might become universal quantifiers. This means that our account, to-

⁵² See in particular fn. (26).

⁵³ It should be noted that our observations are mostly limited to *wh*-based FC indefinites, where there is a clear relationship between the bare *wh*-phrase and the corresponding FC indefinite. For non *wh*-based FC indefinites (e.g. the English *any*), it might be more difficult to assess the validity of our diachronic claims.

⁵⁴ We thank an anonymous reviewer to make us aware of this line of research.

gether with Beck (2017)’s line of research, might be also helpful to understand how universal quantification over alternative propositions, as in FC indefinites, might then change to overt universal quantification of individuals, as in universal quantifiers.

We will now turn our attention to a different and widely adopted account of FC: the grammatical approach developed by Chierchia (2006, 2013). In the following section, we will focus on the account put forward by Chierchia (2013). As done with the Alternative Semantics account, we will explain how Chierchia (2013)’s framework deals with the tree desiderata mentioned at the beginning of Section 5. After a brief outline, we will argue that this analysis is less compatible with the diachronic data presented in this article.

5.2 Free choice in the Grammatical Approach

5.2.1 Outline

In an influential approach Chierchia (2013) treats indefinites as plain existential expressions. Marked indefinites (indefinites with a restricted distribution or polarity items) are assumed to obligatorily activate alternatives. Active alternatives require the application of an operation of exhaustification (Fox, 2007). The difference between indefinites is then accounted in terms of variation of the type of alternatives they may activate and the mode of exhaustification they employ. Universal FC indefinites, like *any* or *qualsiasi*, activate so-called domain alternatives and scalar alternatives, and they allow for recursive exhaustification, leading to a universal-like (free choice) inference.

We observe that in this way Chierchia (2013) is able to capture the quantificational variability between different indefinites, as well as the universal character of FC indefinites. The latter are indeed the first two desiderata mentioned at the beginning of Section 5. In combination with other assumptions (wide-scope constraint and modal containment), which we explain below, Chierchia (2013) is also able to account for the restricted distribution of FC indefinites.

Let us thus consider how Chierchia (2013) derives FC and why the latter inference does not arise with episodic statements, which we know to be ungrammatical. For the purposes of this section, we will consider the case of *any*, but the same analysis can be generalized to *qualsiasi*:

(31) *Any human sang.

We will work with a minimal toy model with two individuals in the domain. For a sentence like (31), Chierchia (2013) assumes the presence of two domains of alternatives: one generated by standard subdomain of alternatives and the other one by scalar reasoning. For readability, we will abbreviate $H(a) \& S(a)$ with A and $H(a) \& \neg S(a)$ with $\neg A$. Similarly for b :

(32) a. Domain = $\{a, b\}$

b. Pre-Exhaustified⁵⁵ Domain Alternatives (Exh-DA):

$$\{O(H(a) \& S(a)), O(H(b) \& S(b))\} = \{A \& \neg B, B \& \neg A\}$$

⁵⁵ O here stands for a covert *only* operator corresponding to exhaustification.

- c. Scalar Alternative (σA):⁵⁶

$$\{(H(a) \& S(a)) \& (H(b) \& S(b))\} = \{A \& B\}$$

The episodic sentence in (31) is represented as in (33a), where *any* is analyzed as an existential. The FC and scalar implicatures arise by exhaustifying with respect to the respective domains of alternatives introduced in (32).

- (33) a. Assertion: $\exists x \in D[H(x) \& S(x)] = A \vee B$
 b. FC Implicature: Assertion + Exhaustification wrt Exh-DA

$$\begin{aligned} & [A \vee B] \& [\neg(\neg A \& B) \& \neg(A \& \neg B)] \\ & = (A \vee B) \& (A \rightarrow B) \& (B \rightarrow A) = A \& B \\ & = \forall x \in D[H(x) \rightarrow S(x)] \end{aligned}$$

- c. Scalar Implicature: Exhaustification wrt σA

$$\begin{aligned} & \neg(A \& B) \\ & = \neg \forall x \in D[H(x) \rightarrow S(x)] \end{aligned}$$

We see that in the case of episodic sentences like (31), a clash between FC and scalar implicatures occurs, resulting in a contradiction and therefore ungrammaticality. Chierchia (2013) needs to explain why this contradiction does not arise in the case of possibility modals, as seen in (23). In order to do so, Chierchia (2013) assumes the following two constraints:⁵⁷

- (34) WIDE SCOPE CONSTRAINT (WSC)
 (a) [any NP MODAL ...] > (b) [MODAL any NP ...]

- (35) MODAL CONTAINMENT (MC)
 SC \subset FC
 (where SC and FC are the modal bases of the scalar and free choice implicatures respectively)

The first constraint is syntactic and tells us that in modal sentences the FC item *any* takes scope over the modal. As a result, the only admitted logical form for a sentence like (36a) is (36b):

⁵⁶ Scalar alternatives are obtained by standard scalar reasoning. See ch. 2 of Chierchia (2013) for discussion.

⁵⁷ Note that assuming the configuration (a) in (34) is a common assumption in the literature on FC indefinites (e.g. Dayal, 2004). Moreover, in the case of Chierchia (2013), his WSC is particularly relevant for his distinction between existential and universal free choice indefinites. In the former case, a so-called economy scale constraint blocks the structure in (a) and makes (b) the only possible option. On this, see in particular Chierchia (2013, sec. 6.4).

- (36) a. Any human may sing.
 b. $[\text{any human}_i [\text{may} [\text{t}_i \text{ sing}]]]$

The second constraint regards the modal bases associated with the implicatures (i.e. the set of worlds over which implicatures quantify). Chierchia (2013) argues that scalar implicatures have a smaller set than free choice ones, being SC compatible with what he calls the ‘privative’ evidential source of the speaker and FC with the intersubjective evidence of discourse participants.⁵⁸

The logical representation for a sentence like (36a) given WSC and the derivations above is the following, where w stands for the world of interpretation:

- (37) a. FC: $\forall x \in D[H_w(x) \rightarrow \exists w' ACC_{FC}(w, w').S_{w'}(x)]$
 b. SC: $\neg \forall x \in D[H_w(x) \rightarrow \exists w' ACC_{SC}(w, w').S_{w'}(x)]$

It seems that the clash between (37a) and (37b) is the same, but here MC comes into play. Since $FC \subset SC$, the implicatures can be true in *different* worlds given an appropriate model of interpretation.

5.2.2 A Diachronic Perspective

The grammatical approach presented here faces some incompatibilities with our diachronic study. First, in the Alternative Semantics case, the link between interrogative uses of *qual* and the FC treatment of *qualsiasi* is evident, since they both give rise to sets of alternatives. In the grammatical approach, there seems to be no clear connection between questions and indefinites.⁵⁹

Second, the different operators posited by Alternative Semantics accounts find a natural explanation in the semantic characterization of unconditionals. In that case, the association of the FC indefinite *qualsiasi* with a universal operator and with an exhaustive reading appear to be inherited by previous uses of the indefinite morphology. By contrast, the grammatical approach leaves an important issue open: why the implicature generated by FC indefinites is part of the grammar (by means of specific exhaustification operators) and what motivates its non-defeasability. In a recent work, Szabolcsi (2019) extended the grammatical approach to the analysis of unconditionals. In this framework, unconditionals are treated as existential statements which undergo recursive exhaustification. To avoid contradictions of the kind outlined before, Szabolcsi (2019) assumes the presence of a covert modal operator in the main clause of the unconditional. Setting aside the technical issues of this work, we note that this account does not fully explain why, in principle, unconditionals were associated with an obligatory (grammatical) implicature. It seems that all we can get here is a circular answer, where the central question, why FC is derived in the grammar, remains unsolved.

This does not mean the grammatical approach is necessarily wrong. One may argue that there is a general underlying principle of language which makes both unconditionals and FC items compatible with a specific kind of (recursive) exhaustification. Indeed, one of the aims of Szabolcsi (2019) is to provide a theory

⁵⁸ For a similar modal constraint, see also Dayal (2013).

⁵⁹ See however Chierchia and Liao (2015) for an attempt to provide a unified framework of indefinites and questions in Mandarin.

which brings together free choice, (negative polarity items) and unconditionals. However, this account assumes that unconditionals are themselves triggered by *wh*-items which independently exhibit universal FC uses (e.g. the Hungarian *akárki* in the case of Szabolcsi (2019)). By contrast, our diachronic data showed that the unconditional structure from which *qualsiasi* developed was formed by the plain *wh*-element *qual(e)*, which has no dedicated universal FC uses.⁶⁰

As a result, while the grammatical approach is able to bring under the same umbrella different otherwise puzzling phenomena associated with FC, it does not explain, based on our diachronic data, how to make sense of the grammaticalization of Italian FC from the plain indefinite *qual(e)* to the FC one *qualsiasi*.

6 Conclusion: Free Choice and Diachronic Adequacy

In this work, we have examined the diachronic evolution of the FC Italian indefinite *qualsiasi*. Based on the collected data, we were able to reconstruct its grammaticalization path from its origin to its uses as an indefinite. We have noted that the FC reading of *qualsiasi* might be inherited from the generalizing reading of unconditional constructions, in which our item appeared before starting to be used as an indefinite. We have then outlined an analysis of FC based on the framework of Alternative Semantics, and we have explained how our diachronic data might be interpreted and accounted within this analysis. By contrast, one of the main competing theories of FC, the grammatical approach, gave no principled answer to the diachronic data, which seemed hardly compatible with this account.

It is commonly assumed that semantic theories should be able to account for the empirical data of the phenomena under investigation. Usually, this is only measured at a synchronic level by means of consistency with native speakers' grammatical intuitions. Recent development in linguistic theories taught us how important data collection of speakers' judgements is. Similarly, the linguistic community started to recognize the value and relevance of experimental methods in assessing their theories and predictions.

In the same spirit, we believe that the empirical adequacy of semantic theories should not only be examined from a synchronic viewpoint, but diachronic considerations should have a role as well. Language involves intrinsic dynamic processes and a proper understanding of our present relies on a proper understanding of our past. On the one hand, semantic theories should be able to determine *what* the contribution of a certain functional expression is. On the other hand, they also need to take into consideration *how* that phenomenon emerged in the historical processes which ultimately constitute the basis of the current synchronic picture of language.

⁶⁰ We note that our analysis applies only to the case of *qualsiasi*, hoping, but not claiming, that our account can be in principle generalized to other languages. It might be possible to find other items where the unconditional uses come after the FC indefinite. In this case, the universality should be accounted in a different way (see e.g. Aloni (2017) for a hypothesis about the origin of the universal meaning of the Spanish FC indefinite *cualquier(a)*, which emerged from universally read free relatives). Similarly, it might be possible that in other cases the FC meaning is actually the result of pragmatic reasoning. This might be particular relevant for the German *irgendein*, as said at the end of Section 5.1.4.

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