

# Indefinites as fossils: the case of wh-based free choice

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## ABSTRACT

The article discusses theoretical repercussions of a number of diachronic corpus studies establishing the patters of development of marked indefinites across languages (Aguilar-Guevara et al. 2012). The focus is on the case of wh-based free choice (FC) indefinites. After summarising the key results of two studies on the historical development of Spanish *cualquiera* and Dutch *wie dan ook*, we present a semantic analysis of the diachronic phases of these two FC indefinites demonstrating how historical data provide additional support for the abstract operators posited by analyses in Alternative Semantics style (Kratzer and Shimoyama 2002, Aloni 2007, Menéndez-Benito 2010).

## 1 Introduction

Individual languages possess a wealth of indefinite forms that relate to each other in complex ways (Haspelmath 1997; Farkas 2002; von Heusinger 2019). English, for example, has at least four different indefinite pronouns: *somebody*, *anybody*, *who*, *nobody*. Other languages have more. These various forms typically differ in distribution and interpretation, but seem to have a common logical/semantic core. For example, consider *any* vs. *some* in English. There are contexts where they can be used without a notable meaning difference (*If you hear something/anything, call me*), others in which they cannot be interchanged (*I didn't meet someone/anyone, You may kiss someone/anyone, I kissed someone/#anyone*). Wh-based free choice indefinites in Spanish and Italian behave like *any* in permissions and episodic sentences (the latter two contexts), but not under negation and, therefore, differ from *any* in this respect (Menéndez-Benito 2010; Aloni 2006; Chierchia 2013). Swedish, Norwegian *wh-som helst* (Sæbø 2001), Lezgian *âajit'ani*, Hebrew *kol* and other indefinites in other languages appear to behave like Italian and Spanish free choice items. The CL-*ote*-series in Swahili, Latvian *ar bith*, French *que ce soit*, instead, seem to behave like English *any* (Haspelmath 1997). Interestingly, the German *irgend*-series exemplify yet another distribution/meaning pattern, resembling *any* in permissions, but being closer to *some* in episodic sentences (Kratzer and Shimoyama 2002; Aloni and Port 2010, 2015). Why so much cross-linguistic

and language-internal variation in indefinite forms? What is the common core of these various indefinites? What is specific to each of them?

In a seminal paper, Kratzer and Shimoyama (2002) proposed a formal analysis of indefinite meaning with the potential to give a principled answer to these questions. In this approach, the common meaning of different indefinite forms is identified in their potential to give rise to sets of propositional alternatives, which can then be bound by a variety of abstract operators. Differences among indefinite forms are then captured by assuming that different forms can associate with different such operators. This style of analysis has reached considerable empirical success in explaining otherwise puzzling intervention effects (Kratzer 2005) and the distribution and meaning of a number of indefinite forms in different languages (e.g. Farkas 2005 for Romanian, Abrusán 2006 for Hungarian, Kim and Kaufmann 2006 for Korean, Aloni 2006 for Italian and Menéndez-Benito 2005; Menéndez-Benito 2010 for Spanish). In the present article I will focus on the case of *wh*-based free choice indefinites and discuss Spanish and Dutch diachronic data from Aguilar-Guevara *et al.* (2011, 2012), which, as I shall argue, provide additional support for the abstract operators posited by analyses in Kratzer and Shimoyama’s style. Formal semantics and diachronic research are rarely combined (notable exceptions are Eckardt 2006; Deo 2015). One of the goals of this article is to show that this combination can lead to new insights and interesting questions worth future investigation.

In languages with distinctive Free Choice (FC) morphology,<sup>1</sup> a free choice inference is integrated into the conventional meaning of an indefinite form. Consider the case of Spanish plain indefinite determiner *un* (‘a’) vs FC indefinite determiner *cualquier* (‘any’).

- (1) *Plain indefinite (Spanish ‘un’)*
  - a. Puedes traer **un** libro. (No traigas *Guerra y Paz*)  
can:2SG bring:INF a book not bring:IMP War and Peace
  - b. Conventional meaning: You can bring me a book
  - c. Free choice inference: Each book is a possible option
- (2) *Free choice determiner (Spanish ‘cualquier’)*
  - a. Puedes traer **cualquier** libro. (# No traigas *Guerra y Paz*)  
can:2SG bring:INF any book not bring:IMP War and Peace
  - b. Conventional meaning: You can bring me a book and each book is a possible option

The free choice inference in (1) is a clear example of a conversational implicature, a defeasible pragmatic effect.<sup>2</sup> In (2), instead, the same inference is no longer cancellable: adding the continuation ‘Don’t bring *War and Peace*’, which would contradict the inference, results in oddity.<sup>3</sup>

<sup>1</sup>Dayal (1998), Giannakidou (2001), Jayez and Tovina (2005), and others.

<sup>2</sup>Grice (1975); Gazdar (1979); Klinedinst (2006); Fox (2007); Aloni (2007); Franke (2011) and others.

<sup>3</sup>An attractive idea, already present in Grice’s seminal work, is that specialized indefinite forms may have emerged as result of historical processes of conventionalisation of originally pragmatic inferences (see also

FC indefinites typically require a licensor to be felicitous. For example, Spanish *cualquier* is ungrammatical in episodic sentences (*#Juan trajo cualquier libro* ‘John brought cualquier book’). One of the challenges for a semantic theory of FC indefinites is to arrive at an account of their FC meaning, which also explains their restricted distribution. Menéndez-Benito (2005); Menéndez-Benito (2010) and Aloni (2006) proposed analyses of Spanish and Italian FC indefinites, which meet this challenge. In these accounts, couched in Kratzer and Shimoyama’s alternative semantics, FC items necessarily associate with two covert operators, **exh** and  $[\forall]$ , with the latter quantifying over the sets of alternatives introduced by the indefinite form. One of the questions arising for these approaches, however, was how to justify the necessary association of FC indefinites with these abstract operators. In this article I will review two diachronic corpus studies on *wh*-based FC items from Aguilar-Guevara *et al.* (2011, 2012) and, in view of these data, I will conjecture that, at least in the studied cases, the association with **exh** and  $[\forall]$  is inherited from earlier universal-like uses of the *wh*-based forms.

The next section summarises Menéndez-Benito (2005); Menéndez-Benito (2010) and Aloni (2006)’s account of FC indefinites. Section 3 reviews the results of the Spanish and Dutch diachronic studies from Aguilar-Guevara *et al.* (2011, 2012). The first diachronic study, which investigates Spanish *cualquier(a)* from 1200s to 1900s, shows an already established indefinite, which is only marginally developing. This motivated the second study on Dutch FC item *wie dan ook* (‘who then also’), which instead clearly shows a *wh*-based FC indefinite “in status nascendi”. Section 4 proposes a semantic analysis of the development phases of the Spanish and Dutch indefinite forms in the style of Eckardt (2006). Kratzer and Shimoyama’s style abstract operators, which can be argued to be inherited from early uses of the indefinite *wh*-morphology, will play a crucial role in the explanation of the diachronic change these constructions went through before they reached their current meaning and distribution.

## 2 Indefinites in Alternative Semantics

Alternative-based analyses of indefinites identify the common meaning of different indefinite forms in their potential to generate sets of propositional alternatives (Kratzer and Shimoyama, 2002; Kratzer, 2005), just like questions do (Hamblin, 1973; Karttunen, 1977; Groenendijk and Stokhof, 1984). Sentences containing the indefinites forms in (3-a) induce the set of alternatives represented in (3-b):

- (3) a. Somebody/anybody/nobody/who fell      b. 

$d_1$ fell	$d_2$ fell	$d_3$ fell	...
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Such sets of propositions can be bound by a variety of operators with different quantificational force. Examples of such operators are defined in (4) (where  $W$  is the logical space, i.e. the set of all possible words, and  $A \subseteq Pow(W)$  is a set of propositions).<sup>4</sup>

Hopper and Traugott 1993; Traugott and Dasher 2002): “[...] it may not be impossible for what starts life, so to speak, as a conversational implicature to become conventionalized.” (Grice, 1975, 58).

<sup>4</sup>Technically the framework of Alternative Semantics assumed here faces a number of well-known problems

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

The core idea is that different indefinite forms have emerged as an indication of necessary association with different matching operators as illustrated in (5) (cf. Onea, this volume, for a different but related view):

- (5) a.  $[\exists]$  (somebody fell)  
 b.  $[\forall]$  (anybody fell) f. 

$d_1$ fell	$d_2$ fell	$d_3$ fell	...
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 c.  $[\text{Neg}]$  (nobody fell)  
 d.  $[\text{Q}]$  (who fell)  
 e. ...

In (5), the expressions in parenthesis denote one and the same set of propositional alternatives, illustrated in (f). The various propositional operators in (5-a) to (5-e) quantify over this set.

It is easy to see that the analysis of FC *any* proposed in (5-b) is too simple-minded as it would predict a universal interpretation for a sentence like (6) with no explanation of its ungrammaticality:

- (6) #Anyone fell.  
 a.  $[\forall]$  (anyone fell) 

$d_1$ fell	$d_2$ fell	$d_3$ fell	...
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 b.  $[\forall](\text{anyone fell}) = [\forall] (\{\text{that } d_1 \text{ fell, that } d_2 \text{ fell, ...}\}) = \{\text{that everyone fell}\}$

Additionally, the truth conditions that would be predicted for the grammatical sentence (7) have been argued by Menéndez-Benito (2005) to be too weak:

- (7) Anyone can fall.  
 a.  $[\forall]$  (anyone can fall) 

$\diamond d_1$ fall	$\diamond d_2$ fall	$\diamond d_3$ fall	...
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 b.  $[\forall](\text{anyone can fall}) = [\forall] (\{\text{that } d_1 \text{ can fall, that } d_2 \text{ can fall, ...}\}) = \{\text{that anyone can fall}\}$

According to Menéndez-Benito, the meaning representation in (7-b) fails to capture the unrestricted freedom of choice expressed by the modal sentence. Consider the following scenario (Menéndez-Benito, 2005, pp. 60–63):

- (8) One of the rules of the card game Canasta is: when a player has two cards that match

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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.* (2017). The analysis presented in this paper can be easily reformulated in an inquisitive semantics setting by adding there the relevant abstract operators. Given that the technicalities of meaning composition are not the main concern of this short paper, I will use the somehow old fashioned alternative semantics formulations, which are easier to parse for a non technically-oriented reader.

the top card of the discard pile, she has two options: (i) she can take all the cards in the discard pile or (ii) she can take no card from the discard pile (but take the top card of the regular pile instead).

In this scenario, (9) is judged false. An analysis along the lines of (7), however, would predict (9) to be true.

- (9) In Canasta, you can take any of the cards from the discard pile when you have two cards that match its top card.

To fix these problems, Menéndez-Benito (2005) assumed that the interpretation of universal free choice items involves the application of an exclusiveness operator, **Excl**, which transforms Hamblin alternatives into sets of mutually exclusive propositions. Applying  $[\forall]$  immediately after **Excl** as in (10) yields a contradiction which explains (9). In (11) the modal operator ‘intervenes’ which avoids the contradiction and delivers the desired universal free choice meaning.

- (10) #Anyone/Cualquiera fell. ALT: 

only $d_1$ fell	only $d_2$ fell	...
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a.  $[\forall](\mathbf{Excl}(\text{cualquiera fell}))$   
b.  $[\forall](\{\text{that only } d_1 \text{ fell, that only } d_2 \text{ fell, ...}\}) = \perp$
- (11) Anyone/Cualquiera may fall. ALT: 

$\diamond$ only $d_1$ fell	$\diamond$ only $d_2$ fell	...
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a.  $[\forall](\diamond(\mathbf{Excl}(\text{cualquiera fall})))$   
b.  $[\forall](\{\text{that } \diamond \text{ only } d_1 \text{ fell, that } \diamond \text{ only } d_2 \text{ fell, ...}\}) \neq \perp$

Aloni (2006) extended Menéndez-Benito’s analysis employing rather than **Excl** a more general operation of exhaustification, **exh**, assumed to play a role also in the semantics of free relatives and wh-interrogatives:

- (12) a. **Free relative:** John ate  $[_{DP}$  what Bill cooked]  
b. **Wh-interrogative:** John knows  $[_Q$  what Bill cooked]

Building on Cooper (1983) and Jacobson (1995), Aloni assumed that free relatives and wh-interrogatives are born with the same meaning, a predicative meaning, but type-shift differently: free relatives type-shift into an entity-denoting expression, wh-interrogatives into a proposition-denoting one.

- (13) what Bill cooked type:  $\langle e, \langle s, t \rangle \rangle$   
a. (John ate)  $[_{DP}$  what Bill cooked] type:  $e$   
b. (John knows)  $[_Q$  what Bill cooked] type:  $\langle s, t \rangle$

The common meaning of (13-a) and (13-b) is an exhaustive property of type  $\langle e, \langle s, t \rangle \rangle$  denoting the set of pairs  $(x, v)$  where  $x$  is the maximal collection of things that Bill cooked in  $v$ :

- (14) what Bill cooked

- a. **exh**[what,  $\lambda x$ . Bill cooked  $x$ ] type:  $\langle e, \langle s, t \rangle \rangle$
- b.  $\{\lambda x \lambda v. x \text{ is the maximal collection of things that Bill cooked in } v\}$

In the case of wh-interrogatives, this property will type shift into a question/proposition denotation via the  $\text{SHIFT}_{\langle s, t \rangle}$  rule, which as output yields a partition of the logical space:<sup>5</sup>

- (15) (John knows) [ $Q$  what Bill cooked]
- a.  $\text{SHIFT}_{\langle s, t \rangle}(\mathbf{exh}[\text{what}, \lambda x. \text{Bill cooked } x])$  type:  $\langle s, t \rangle$
  - b.  $\{\text{Bill cooked nothing, Bill cooked only } d_1, \text{ Bill cooked only } d_2, \text{ Bill cooked only } d_1 \ \& \ d_2, \dots\}$

In the case of free relatives, the same property can type-shift into a DP denotation via the  $\text{SHIFT}_e$  rule.

- (16) (John ate) [ $DP$  what Bill cooked]
- a.  $\text{SHIFT}_e(\mathbf{exh}[\text{what}, \lambda x. \text{Bill cooked } x])$  type:  $e$
  - b.  $\{\text{the maximal collection of things that Bill cooked in } w_0\}$

Via point-wise functional application this denotation combines with the denotation of the rest of the sentence to yield the singleton set containing the proposition that John ate what Bill cooked. Eventually this set will be bound by [ $Q$ ], the operator wh-pronouns necessarily associate with. Here, [ $Q$ ] is the identity function as defined in (4). Therefore, as illustrated in (17), this analysis explains the definite reading that the free relative obtains in this sentence.

- (17) a. John ate [ $DP$  what Bill cooked]  
 b. [ $Q$ ] (**ate**(j)( $\text{SHIFT}_e(\mathbf{exh}[\text{what}, \lambda x. \text{Bill cooked } x])$ ))  
 c.  $\{\text{that John ate the things that Bill cooked in } w_0\}$

In Aloni's (2006) proposal (Italian) wh-based FC items trigger the application of **exh**, just like wh-words do, but rather than necessarily associating with [ $Q$ ] as plain wh-pronouns do, they associate with a universal propositional quantifier [ $\forall$ ]:

- (18) a. Plain wh-pronoun: [ $Q$ ] ... **exh**[WHO,  $\lambda x \psi(x)$ ] ...  
 b. Wh-based FC item: [ $\forall$ ] ... **exh**[FCI,  $\lambda x \psi(x)$ ] ...

On this analysis, wh-based FC items are correctly predicted to be ungrammatical in episodic sentences (and under necessity modals), and FC inferences under possibility modals are readily derived as semantic entailments as in Menéndez-Benito (2005, 2010), but improving on Menéndez-Benito also subtriggering (which in Section 3 will be called UFC uses) are easily explained, (as well as universal readings in comparative clauses, such as *Mary is taller than anyone else*, see Aloni and Roelofsen, 2014):

<sup>5</sup>If  $\mathbf{exh}[\alpha_e, \beta_{e(st)}]$  of type  $e(st)$  denotes the property of exhaustively satisfying  $\beta$  wrt domain  $\alpha$ ,  $\text{SHIFT}_e(\mathbf{exh}[\alpha_e, \beta_{e(st)}])$  of type  $e$  denotes the maximal set of individuals from domain  $\alpha$  which satisfies  $\beta$ , and  $\text{SHIFT}_{st}(\mathbf{exh}[\alpha_e, \beta_{e(st)}])$  of type  $st$  denotes the partition determined by the question 'which individuals from domain  $\alpha$  are  $\beta$ '. See Aloni (2006) for definitions.

- (19) #Anyone fell.
- a.  $[\forall](\text{SHIFT}_{(s,t)}(\mathbf{exh}[\text{anyone, fell}]])$
- b. 

nobody fell	only $d_1$ fell	only $d_2$ fell	...
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- (20) Anyone can fall.
- a.  $[\forall](\diamond(\text{SHIFT}_{(s,t)}(\mathbf{exh}[\text{anyone, fall}])))$
- b. 

$\diamond$ nobody fell	$\diamond$ only $d_1$ fall	$\diamond$ only $d_2$ fall	...
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- (21) Anyone who tried to jump fell.
- a.  $[\forall](\downarrow\text{SHIFT}_e(\mathbf{exh}[\text{anyone, who tried to jump}] \text{ fell}))$
- b. 

$d_1$ fell	$d_2$ fell
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In the first two structures the value produced by exhaustification undergoes the  $\text{SHIFT}_{(s,t)}$  rule yielding the partition represented in (19-b). In (19-a), each alternative in this partition is stated to be true resulting in a contradiction. This explains why universal FC items are out in plain episodic sentences. In (20) the element of the partition are further expanded by the modal operator. Universal quantification in this case does no longer result in a contradiction. Finally, in the subtriggered case (21), exhaustification crucially occurs inside the DP. Therefore, the value it produces undergoes the  $\text{SHIFT}_e$  rule yielding as output in  $w$  the sum of people who tried to jump in  $w$ . To avoid trivial quantification,  $\downarrow$  applies to this sum to produce a set of singular individuals.<sup>6</sup> The VP denotation  $\llbracket \text{fell} \rrbracket_{w,g}$  applies to the latter set producing the set of Hamblin alternatives represented in (21-b). Since this set occurs in the scope of a universal operator, the sentence obtains the desired interpretation: *everyone* who tried to jump fell.

One of the questions arising for Aloni’s (2006) approach, however, was how to justify the necessary association of FC items with  $\mathbf{exh}$  and  $[\forall]$ . In the next section we summarise the results of two diachronic studies conducted on *wh*-based free choice items presented in Aguilar-Guevara *et al.* (2011) and then conjecture that at least for the studied cases, while  $\mathbf{exh}$  plausibly comes from *wh*-morphology, the emergence of  $[\forall]$  in (18-b) is triggered by earlier universal-like uses of the *wh*-based forms.

### 3 Diachronic studies

In this section we summarise the results of two corpus based diachronic studies presented in Aguilar-Guevara *et al.* (2011, 2012) investigating the development of Spanish *cualquier(a)* and Dutch *wie dan ook*. These constructions, in addition to the free choice meaning, share the property of being compounds and containing an interrogative word meaning ‘who’ or

<sup>6</sup>The operation  $\downarrow$  maps plural individuals back into their atomic elements.

- (i) Illustration:
- a.  $\llbracket \alpha \rrbracket_{w,g} = \{a + b\}$  a singleton set of plural entities
- b.  $\llbracket \downarrow \alpha \rrbracket_{w,g} = \{a, b\}$  a multi-membered set of atomic alternatives

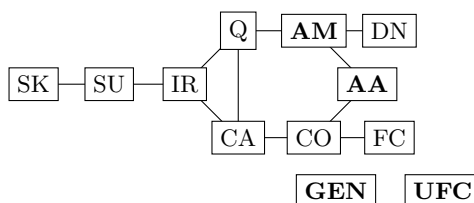
‘which’ within their constituents. Section 4 will then present a semantic analysis of the (conjectured) phases of development of these two items building on Aloni’s (2006) account, presented in the previous section.

In total, Aguilar-Guevara *et al.* (2011, 2012) conducted synchronic and diachronic corpus studies of free choice (FC) and epistemic indefinite (EI) forms from six different languages.<sup>7</sup> In the synchronic research they studied the following items: English FC *any*, Czech FC *kterýkoli*, Italian FC (*uno*) *qualunque*, Spanish FC *cualquier(a)*, Dutch FC *wh dan ook* and German EI *irgend*-series. In the diachronic research they studied Spanish *cualquier(a)*, Dutch *wie dan ook* and German *irgend*-series.<sup>8</sup> This section, which largely overlaps with Aguilar-Guevara *et al.* (2011), summarises the key findings of the Spanish and Dutch diachronic portion of this research. I will first briefly describe the methodology adopted and report on the relevant synchronic results.

### 3.1 Methodology

In these corpus studies coders annotated randomly selected occurrences of the indefinite according to a number of categories. The starting point for the identification of the relevant categories was Haspelmath’s (1997) typological survey. Haspelmath identified 9 main functions for indefinite forms organized in an implicational map. Aguilar-Guevara *et al.* (2011, 2012) assumed the following extended version of Haspelmath’s map motivated by a more detailed classification for Negative Polairty and Free Choice Items. The newly introduced functions are in boldface in the following illustrations:

(22) *An extended version of Haspelmath’s map*



(23) *Functions on the map*

<sup>7</sup>The corpus studies reported in this section were conducted as part of a NWO-funded project that ran from 2008 to 2012 at the University of Amsterdam and are joint work with Ana Aguilar-Guevara (Spanish), MA (Italian), Angelika Port (German), Radek Simik (Czech), Stephanie Solt (English), and Machteld de Vos (Dutch). Tikitu de Jager, Hedde Zeijlstra and Katrin Schulz were also involved in various phases of this project.

<sup>8</sup>All annotated data are available at <https://osf.io/z2j9e/>. See Aguilar-Guevara *et al.* (2012) for full documentation.



	<b>Abbr</b>	<b>Label</b>	<b>Example</b>
a.	SK	specific known	<i>Somebody</i> called. Guess who?
b.	SU	specific unknown	I heard <i>something</i> , but I couldn't tell what.
c.	IR	irrealis	You must try <i>somewhere</i> else.
d.	Q	question	Did <i>anybody</i> tell you anything about it?
e.	CA	conditional antec.	If you see <i>anybody</i> , tell me immediately.
f.	CO	comparative	John is taller than <i>anybody</i> .
g.	DN	direct negation	John didn't see <i>anybody</i> .
h.	<b>AM</b>	anti-morphic	I don't think that <i>anybody</i> knows the answer.
i.	<b>AA</b>	anti-additive	The bank avoided taking <i>any</i> decision.
j.	FC	free choice	You may kiss <i>anybody</i> .
k.	<b>UFC</b>	universal free choice	John kissed <i>any</i> woman with red hair.
l.	<b>GEN</b>	generic	<i>Any</i> dog has four legs.

A function in this framework can be identified with a pair consisting of a syntactic context and a semantic interpretation. In order for an indefinite to qualify for a function, it must (i) be grammatical in the syntactic context the function specifies; and (ii) have the semantics that the function specifies. For example, *any* does not qualify for the specific functions SK and SU because it is ungrammatical in episodic sentences, marked as # in (24), while *somebody* does not qualify for the comparative function, CO, or the free choice function, FC, because it does not have the universal meaning these functions specify, marked as \* in (25):

- (24) a. Somebody/#anybody called. Guess who? [SK]  
b. I heard something/#anybody, but I couldn't tell what. [SU]
- (25) a. You may kiss anybody/\*somebody. [FC]  
'For every individual  $x$  it holds that you may kiss  $x$ .'  
b. John is taller than anybody/\*somebody. [CO]  
'For every individual  $x$  it holds that John is taller than  $x$ .'

During annotation the functions in (23) were identified with logico-semantic interpretations and a number of diagnostic tests organized in a decision tree were used to assign to each instance of an indefinite a function on the map.<sup>9</sup> In ambiguous cases, such as (26), if the context did not disambiguate the intended reading, the instances were annotated with both possible functions. To keep the randomly chosen occurrences stable the readings were counted as 0.5.

- (26) If she can solve any problem, she'll get a prize.  
a. ('existential') If there is any problem she can solve, ... [CA]  
b. ('universal') If she can solve every problem, ... [FC]

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<sup>9</sup>An assessment of the methodology by measuring inter-annotator agreement with the *kappa* coefficient has been carried out in January 2011. Five annotators coded 100 randomly chosen examples from the British National Corpus. Each example contained one marked occurrence of *some* (20 examples) or *any* (80 examples). The average kappa score obtained was poor in general (kappa: 0.52), but it improved significantly (kappa: 0.69) when internal distinctions within the specificity area and the negative area were disregarded. For details see (Aloni *et al.*, 2012).

While these tests proved useful for most cases, there were examples for which the decision tree was inconclusive. For some of these cases Aguilar-Guevara *et al.* (2011, 2012) introduced new off-map functions, such as the indiscriminacy function, IND, which was added to cover examples like (27) from Horn (2005).

### Indiscriminacy

(27) I do not want to go to bed with just *anyone* anymore. I have to be attracted to them sexually.

For the diachronic studies more off-map functions were added to label uses which were not strictly indefinite, like *no matter*, *adposition*, and *free relative* uses, for which we give here an illustration in Czech, English and Italian:

### No matter

(28) Ať už jsme v kterékoli zemi, všude nacházíme slušné lidi.  
 let already be:1PL in any country everywhere find:1PL polite people  
 ‘No matter in which country you are, you can find polite people everywhere.’

### Adposition

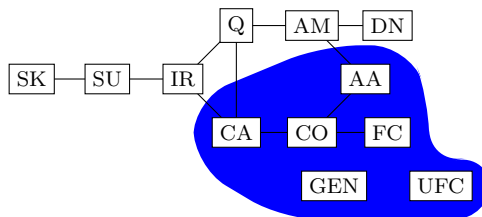
(29) You may choose an apple, any apple.

### Free Relative

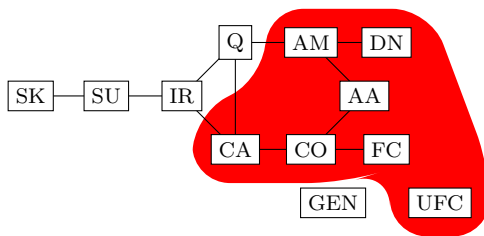
(30) Ha aiutato chi è caduto.  
 have:3SNG helped who be:3SNG fallen  
 ‘He helped who fell’

The synchronic studies attested the following distributions for the Dutch and Spanish indefinites on the extended Haspelmath’s map:

(31) Spanish *cualquier(a)*



(32) Dutch *wh dan ook*



In what follows we summarise the main results of the diachronic research on these two items.

## 3.2 Results diachronic studies

### 3.2.1 Spanish ‘cualquiera’

*Cualquiera* (pronoun), or *cualquier* (determiner), translated to English as *whatever*, *whichever*, *whoever* or *any*, and composed of *cual* (‘which/who’) plus *quier(a)* (‘want:3.PRES.SUBJ’), has been claimed to have emerged in Spanish as result of a grammaticalization process through which free relative clauses were reanalyzed as indefinite noun phrases (see Company Company and Pozas-Loyo, 2009).

(33) *Hypothesized grammaticalization process for ‘cualquiera’*

a. *Free relative clause*

Haga en él **cual** castigo **quiera**.  
do on him which punishment want:3.PRES.SUBJ

b. *Phrasal compound*

Haga en él **cual** **quiera** castigo.  
do on him which want:3.PRES.SUBJ punishment

c. *Indefinite*

Haga en él **cualquier(a)** castigo  
do on him whichever punishment

Aguilar-Guevara *et al.* (2011) could not witness this process, which presumably, occurred in early stages of the history of Spanish. Figure 1 shows the number of occurrences of the construction they found in *El Corpus del Español* in the four periods selected for their study. As the graph illustrates, recurrent occurrences of *cualquiera*, as a word, are found already in the first documentations of Spanish, which date back to the thirteenth century. Furthermore, the presence of *cualquiera* doubles between the 1200s and the 1500s, reaching a similar proportion to that documented for the 1900s. Aguilar-Guevara *et al.* took the latter fact as an indicator that the use of the construction is consolidated at least since the sixteenth century. The distribution of the functions on the extended Haspelmath’s map that *cualquiera* covered throughout these periods is given in Figure 2. As the graph illustrates, the use of the construction remained pretty stable throughout the centuries with the FC function as clearly the most dominant since the first period. Interestingly,

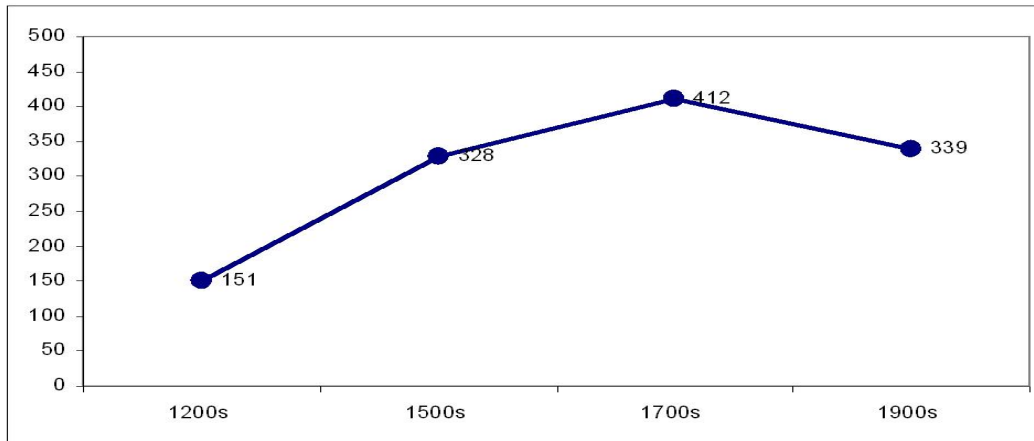


Figure 1: Number of occurrences of *cualquiera* per million of words (from Aguilar-Guevara *et al.*, 2011)

the UFC function displays a remarkable decrease starting in the 1500s, when the use of the construction consolidated. Aguilar-Guevara *et al.* tentatively attributed this to the fact that *cualquiera*, as part of its grammaticalization, occurs less and less frequently accompanied by post-nominal modifiers such as restrictive relative clauses and prepositional adjuncts, which typically serve as licenser of free choice items in subtriggering UFC uses (e.g. *John kissed any woman #(with red hair)*). I will return to this issue in the analysis section. The last important observation is that two more off-map functions, namely IND and *no matter*, appear in the 1500s and gain presence by the 1900s. The late emergence of the *no matter* function will turn particularly interesting in light of the development of the Dutch indefinite *wie dan ook*.

As said, given the early grammaticalization of *cualquiera*, and stable distribution of its functions, Aguilar-Guevara *et al.* (2011) could not really attest much of the process this compound went through in order to behave as it does nowadays. This motivated the study of *wie dan ook*, an indefinite comparable to *cualquiera* in meaning and (partly) in form, but that emerged in Dutch more recently and that even in these days appears to be ‘less’ grammaticalized than its Spanish counterpart.

### 3.2.2 Dutch ‘wie dan ook’

The Dutch diachronic study consisted of the analysis of occurrences of *wie dan ook* (‘who also then’) in written Dutch historical corpora (CD-ROM Middelnedderlands (270 texts before 1300), DBNL (4458 text from 1170-2010)) (de Vos, 2010). The first occurrence found was

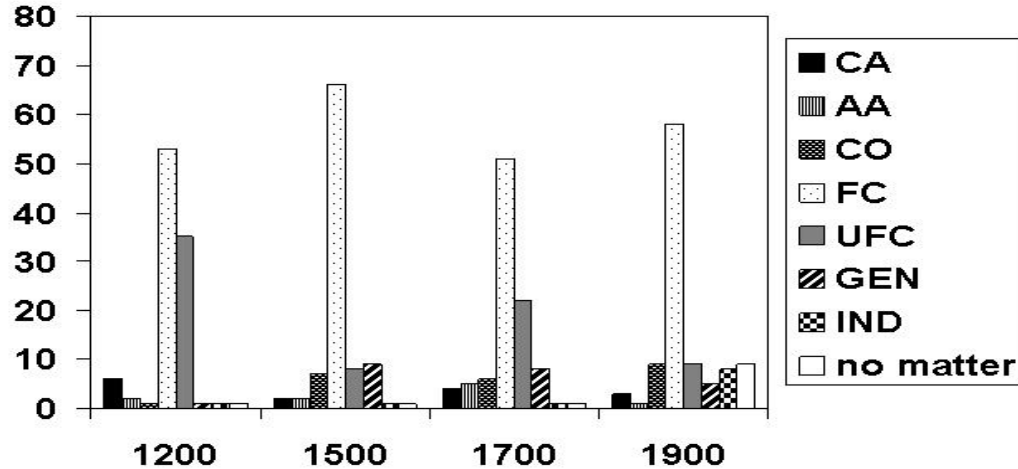


Figure 2: Functions covered by *cualquiera* in 1200s, 1500s, 1700s and 1900s (from Aguilar-Guevara *et al.*, 2011)

from 1777;<sup>10</sup> the period of this indefinite’s existence was therefore divided into four phases, each covering 55 years of the indefinite’s evolution. The outcome, illustrated in Figure 3, shows that *wie dan ook* went through a four-staged process of grammaticalization. Aguilar-Guevara *et al.* (2011) describe the four stages as follows:

**Stage I** The first phase in the grammaticalization of *wie dan ook* as an indefinite is formed by three forms of the *no matter*-function. Characteristic of types of *no matter* constructions is that the *wh dan ook* is not part of the main clause yet: they all consist of either a *wh*-clause and a main clause, or a *wh*-clause within a main clause, as illustrated as follows:

- (34) a. Wie dan ook naar het feest komt; ik zal blij zijn.  
 ‘Whoever comes to the party; I will be happy.’  
 b. [Wie dan ook naar het feest komt]<sub>i</sub>; hij<sub>i</sub> zal blij zijn.  
 ‘[Whoever comes to the party]<sub>i</sub>; he<sub>i</sub> will be happy.’  
 c. Jan, (of) wie dan ook hij mag zijn, zal blij zijn.  
 ‘John, (or) whoever he may be, will be happy.’

<sup>10</sup>Het gevoelen dat de Demons, of de Zielen der overleden menschen, zulks zouden uitwerken, of dat het, **wie dan ook** de Demons der Ouden waren, aen ene bovennatuurlyke oorzaak zou toe te schryven zyn, gaet de Auteur hier ten sterkste tegen, door ene redenering, die te gelyk ten klaerste toont, dat men hier genoegzamen grond heeft, om in natuurlyke oorzaken te berusten; zonder dat de Rede ons enigzins verplicht, om op bovennatuurlyke oorzaken te denken. [source: Vaderlandsche Letteroefeningen, p. 383; year: 1777; function: *no-matter*]



Figure 3: Four stages in the grammaticalization of *wie dan ook* (from Aguilar-Guevara *et al.*, 2011)

These forms occur around the same time. Together, they seem particularly frequent in the first phase, forming a significant majority of the total amount of occurrences here, with this relative amount decreasing in the three phases that follow (cf. the black bars in Figure 3).

**Stage II** In the following stage in the development of *wie dan ook* as an indefinite, *no matter* constructions are shortened to so-called adpositions, thus getting one step closer to becoming a grammaticalized indefinite. Adpositions have the following form: [..., [*wie dan ook*], ...]. They are shortenings of the *no matter*-function, formed by the ellipsis of the predicate. Although they do not form a separate *wh*-clause next to or within a main clause anymore, they are still not part of the actual sentence and therefore no real indefinites: they merely modify the noun they are placed after, conveying an ignorance inference as in (35) or an indifference meaning, as in (36):

(35) Jan, *wie dan ook*, is blij.  
 ‘Jan, whoever, is happy.’

(36) Als er iemand, *wie dan ook*, naar het feest komt, zal ik blij zijn.  
 ‘If someone, whoever/anyone, comes to the party, I will be happy.’

As the grey bars in Figure 3 show, this adpositional modification with a *wie dan ook* is particularly frequent in the second phase in the development of this indefinite.

**Stage III** The third phase, the *free relative*-stage, shows a further integration of the *wie dan ook*-clause into the sentence, though still not a full integration either. The Free Relative (FR) function, the most frequent use in this phase, forms another spinoff of the *no matter* construction. However, whereas *no matter* constructions still form combinations of wh-clauses (*wie dan ook* + predicate) and a main clause, the FR-function is more integrated than that, with the “*wie dan ook* + predicate” not forming a separate clause, but an actual part of the main clause, typically the subject. Examples of the FR-function have the following form: [[*wie dan ook* + predicate](,) VP], as illustrated in (37):

- (37) Wie dan ook naar het feest komt(,) zal blij zijn.  
 ‘Whoever comes to the party(,) will be happy.’

However, these subjects consisting of *wie dan ook* + predicate are often followed by a comma, thereby perhaps indicating that they are still seen as slightly standing outside of the actual sentence. Yet omitting the part starting with *wie dan ook* would give an incomplete thus ungrammatical sentence. This is a specific feature of the FR-function dominating the third phase; both the *no matter*-clauses and the adpositions can still be left out, of course sometimes causing a change in meaning of the sentence, but never with an incomplete sentence as a result.

**Stage IV** In this last stage of the grammaticalization of *wie dan ook*, the word group has finally become an indefinite. Examples of this kind form integrated parts of the sentence, with a plain *wie dan ook*, without any kind of predicate modifying it, being either subject or object: [... [*wie dan ook*] ...].

- (38) Je mag wie dan ook uitnodigen voor het feest.  
 ‘You may invite anyone to the party.’

Indefinite uses of *wie dan ook* exist from 1833 onwards, and their number increases in every phase, finally forming a vast majority of the occurrences in the fourth phase, as the graph in Figure 3 illustrates.

Overall, Aguilar-Guevara *et al.* (2011) concluded that the process of grammaticalization of *wie dan ook* as an indefinite roughly followed four stages, starting off as a *no matter* construction in a separate wh-clause, slowly evolving into an adpositional modifier on its own, while also turning into a part of the main clause with predicate, eventually yielding to the true and plain indefinite *wie dan ook* as part of a sentence.

The initial hypothesis of Aguilar-Guevara *et al.* (2011) was that FC indefinites emerged as the result of a process of conventionalisation of an originally pragmatic inference. The envisaged ‘conventionalisation’ was in fact quite difficult to test because conversational implicatures are by definition not overtly expressed. The testing would have to consist in checking for a raising frequency of a conversational implicature of sentences with unmarked indefinites, then a development of a morpheme which captures the implicature and then its grammaticalization. Alternatively, the morpheme that had already been used in a plain indefinite use would change its function - the implicature would be built in. The latter is not

what was found for Dutch (or conjectured for Spanish). Yet, the observed development of *wie dan ook* is consistent with the former, with the various appositive constructions within *wie dan ook* started out its life as forms which express the original implicature and later get grammaticalized. More precisely, the grammaticalization path that was found for *wie dan ook* could be interpreted as a path from a conversational implicature, via a conventional implicature in the sense of Potts (2005)<sup>11</sup> to a conventional meaning (i.e. core / at-issue semantics).

- (39) a. Jij mag iemand uitnodigen. (plain indefinite + conversational implicature)  
 b. Jij mag iemand, wie dan ook (hij mag zijn), uitnodigen. (plain indefinite + conventional implicature)  
 c. Jij mag wie dan ook uitnodigen (new FC indefinite)

## 4 The emergence of wh-based FC: towards an analysis

From the researched summarised in the previous section we can conclude that in the development of Spanish *cualquiera* and Dutch *wie dan ook* the same constructions were involved though not in the same order:

SPANISH: free relative (conjectured) > free choice indefinite > no matter uses

DUTCH: no matter uses > adposition > free relative > free choice indefinite

In this section, extending Aloni (2006), I propose a semantic analysis of these different phases where differences in meaning and distribution among free choice indefinites, free relatives, adpositions and no matter constructions are derived by different combinations of a small number of independently motivated semantic operations. In view of this analysis, the development of Spanish and Dutch free choice can be explained in terms of *changes* that affect these different operators and their possible combinations.

A further consequence concerns the nature of the conventionalisation of the free choice implicature that the Dutch and Spanish cases appear to illustrate. In an influential approach, Chierchia proposed to treat the free choice inference triggered by FC indefinites as a type of scalar implicature resulting from the application of a grammatical version of an operation of exhaustification (Chierchia, 2013). The diachronic analysis presented here suggests a different explanation: the free choice inference triggered by these indefinites is not the result of exhaustification but rather follows from the application of an operator of universal quantification [ $\forall$ ] inherited from the constructions the newly developed free choice items derive from: (universally read) free relatives in the case of Spanish and no matter constructions in the case of Dutch. Let us have a closer look.

<sup>11</sup>According to Potts (2005), adpositives express conventional implicatures, i.e. not at-issue meanings.



## 4.1 The emergence of Spanish free choice

Grosu and Landman (1998) observed that free relatives are ambiguous between a definite and a universal reading as illustrated in (40):

- (40) We will veto three-quarters of whatever proposals you make.
- a. Of the proposals: three-quarters won't make it. (definite)
  - b. For each proposal: three-quarters of it will be vetoed. (universal)

Aloni (2006) captures the difference between (40-a) and (40-b) by assuming that the latter is further bound by a propositional universal quantifier:

- (41) We will veto three-quarters of whatever proposals you make.
- a. FR:  $[Q](\mathbf{P}(\text{SHIFT}_e(\mathbf{exh}[\text{whatever}, \mathbf{S}])))$  (definite)
  - b. UFR:  $[\forall]([Q](\mathbf{P}(\downarrow\text{SHIFT}_e(\mathbf{exh}[\text{whatever}, \mathbf{S}]))))$  (universal)

As we saw in Section 2, (41-a), which denotes a singleton set of propositions, immediately characterises the definite reading of the sentence. To characterise the universal reading, we need to further apply  $[\forall]$  (and  $\downarrow$  to avoid vacuous quantification).

We can then conjecture that the emergence of  $[\forall]$  in association with Spanish *cualquier(a)* was triggered by early universally read free relative uses of the wh-form, as illustrated in (42).

- (42) Conjectured development of Spanish *cualquier(a)*
- a. FR:  $[Q](\mathbf{P}(\text{SHIFT}_e(\mathbf{exh}[\text{item}, \mathbf{S}])))$  (free relative)
  - b. UFR:  $[\forall]([Q](\mathbf{P}(\downarrow\text{SHIFT}_e(\mathbf{exh}[\text{item}, \mathbf{S}]))))$  (universal free relative (UFR))
  - c. UFC:  $[\forall](\mathbf{P}(\downarrow\text{SHIFT}_e(\mathbf{exh}[\text{item}, \mathbf{S}])))$  (UFC indefinite)
  - d. FC:  $[\forall](\diamond(\text{SHIFT}_{\langle s,t \rangle}(\mathbf{exh}[\text{item}, \mathbf{S}])))$  (FC indefinite)

In agreement with hypothesis (33) concerning the grammaticalisation of *cualquiera*, we conjecture that the wh-form *cual* ('what') originally employed in free relative constructions (42-a) started combining with a propositional quantifier  $[\forall]$  to generate universal reading of free relative uses as in (42-b). These then developed into subtriggered UFC uses where a wh-based indefinite directly associates with  $[\forall]$  as illustrated in (42-c). Both UFR and UFC uses employ  $[\forall]$  in combination with an individual shifted notion of exhaustification  $\text{SHIFT}_e(\mathbf{exh}[\alpha, \beta])$ . Only in a later phase full-fledged FC uses emerged where  $[\forall]$  combines with a propositional shifted exhaustification,  $\text{SHIFT}_{\langle s,t \rangle}(\mathbf{exh}[\alpha, \beta])$ , which we can assume was already present in the language to generate ordinary wh-interrogative uses. In yet a later phase *no matter* uses emerged as well but as the Spanish diachronic data demonstrate these were not instrumental to the development of the free choice indefinite. Although Aguilar-Guevara *et al.* (2011) did not witness the emergence of *cualquier(a)* in the corpus study, the high frequency of UFC uses in phase one of their dataset (see the grey bar in Figure 2) would have a natural explanation if *cualquier(a)* were indeed born with the UFC function as conjectured in (42).

Dutch *wie dan ook*, instead, followed a different development pattern with *no matter* as its first use. As explained below, *no matter* constructions require the application of  $[\forall]$  giving rise to a different explanation of what triggered the emergence of  $[\forall]$  in the development of Dutch free choice.

## 4.2 The emergence of Dutch free choice

Recall that Aguilar-Guevara *et al.* (2011) have encountered four uses of *wie dan ook* in their diachronic study:

1. **no matter** [**wie dan ook + predicate**], [main clause]  
 (43) Wie dan ook naar het feest komt; ik zal blij zijn.  
 ‘Whoever comes to the party; I will be happy.’
2. **adposition** [... , [**wie dan ook**], ...]  
 (44) Als er iemand<sub>i</sub>, wie dan ook<sub>i</sub>, naar het feest komt, zal ik blij zijn.  
 ‘If someone, whoever/anyone, comes to the party, I will be happy.’
3. **free relative** [[**wie dan ook + predicate**] (,) VP]  
 (45) Wie dan ook naar het feest komt(,) zal blij zijn.  
 ‘Whoever comes to the party(,) will be happy.’
4. **FC indefinite** [... [**wie dan ook**] ...]  
 (46) Je mag wie dan ook uitnodigen voor het feest.  
 ‘You may invite anyone to the party.’

The free relative and FC indefinite examples will be analysed as in Aloni (2006). In what follows,  $\mathbf{exh}_a[\alpha_e, \beta_{e(st)}]$  is short for  $\text{SHIFT}_a(\mathbf{exh}[\alpha_e, \beta_{e(st)}])$ .

- (47) a. Wie dan ook naar het feest komt(,) zal blij zijn.  
 b.  $[\text{Q}](\text{happy}(\mathbf{exh}_e[\text{wie dan ook}, \lambda x.x \text{ comes to party}]))$  (definite)  
 c.  $[\forall](\text{Q})(\text{happy}(\downarrow \mathbf{exh}_e[\text{wie dan ook}, \lambda x.x \text{ comes to party}])))$  (universal)  
 ‘Whoever comes to the party(,) will be happy.’
- (48) a. Je mag wie dan ook uitnodigen voor het feest.  
 b.  $[\forall](\diamond(\mathbf{exh}_{(s,t)}[\text{wie dan ook}, \lambda x.\text{you invite } x \text{ to the party}])))$   
 ‘You may invite anyone to the party.’

In what follows I extend Aloni (2006) with an explicit analysis of *no matter*-constructions and adpositions.

**No matter** I propose to analyze *no matter*-constructions as unconditionals building on Rawlins (2008):

- (49) a. Wie dan ook naar het feest komt; Jan zal blij zijn.  
 b.  $[\forall](\mathbf{exh}_{\langle s,t \rangle}[\text{wie dan ook, } \lambda x.x \text{ comes to party}](\lambda_i \Box_i \phi))$   
 ‘Whoever comes to the party; I will be happy.’

The *wie dan ook* clause acts here as a restrictor of the domain of quantification of the modal in the main clause as in Rawlins (2008). Thus *no matter*-constructions seem to require a modal (‘zal’ or similar) in the main clause and this appears to be confirmed by the corpus data. In the present formalization, sentence (49) asserts that all of the following propositions must be true: If nobody comes, Jan will be happy;<sup>12</sup> If only *a* comes, Jan will be happy; if only *b* comes, Jan will be happy, and so on. This is enough to capture the indifference flavour of the sentence (‘It doesn’t matter who comes to the party, Jan will be happy in any case’). Furthermore, since the *wie dan ook* clause denotes a partition of the logical space, the main clause ‘Jan will be happy’ is entailed by (49-b) as it should be.

Note that in (49), the *wie dan ook* clause cannot be interpreted on its own and must be integrated in the unconditional construction. Indeed *wie dan ook naar het feest komt* (‘wie dan ook comes to the party’) is ungrammatical in isolation. This is captured in this analysis because  $[\forall](\mathbf{exh}_{\langle s,t \rangle}[\text{wie dan ook, } \lambda x.x \text{ comes to party}])$  is a contradiction. To be interpretable on its own the *wie dan ook* clause would need the presence of an operator which intervenes between  $[\forall]$  and  $\mathbf{exh}$ , for example a possibility modal like *mag* (‘may’). This is precisely what appears to happen in the following stage of the development of the Dutch item, the adposition phase (Stage II), or at least so we conjecture. In adpositions, the ‘*wie dan ook* clause’ gets interpreted independently (possibly on a different level) of the main clause. We might conjecture that frequent cases with explicit *mag* (‘may’) inside the *wie dan ook*-clause in the late *no matter* phase triggered the transition to the next adposition phase where *wie dan ook* clauses with (implicit) *mag* (‘may’) get an independent interpretation.

**Adpositions** Aguilar-Guevara *et al.* (2011) found two variants of “adpositions” in their data:

1. Clause adposition:<sup>13</sup> *...*, *wie dan ook P*, *...*

(50) Jan, *wie dan ook* hij *mag* zijn, is blij.  
 ‘Jan, whoever he may be, is happy.’

2. Plain adposition: *...*, *wie dan ook*, *...*

(51) Jan, *wie dan ook*, is blij.  
 ‘Jan, whoever, is happy.’

In the corpus they encountered and labeled two possible interpretations for plain adpositions:

<sup>12</sup>This is different from Rawlins (2008), who does not have the ‘nobody’ alternative and therefore does not produce partitions of the logical space.

<sup>13</sup>Clause adpositions were annotated as *no matter* (type UN3) in (Aguilar-Guevara *et al.*, 2011), cf. (34-c).

1. *Indifference*:

- (52) Jij mag iemand, wie dan ook, uitnodigen.  
'You may invite someone, anyone'

2. *Ignorance*:

- (53) Jan, wie dan ook, is blij.  
'Jan, whoever (Jan may be), is happy.'

In clause adpositions and other *no matter*-constructions we have two propositions, which must somehow be integrated: one expressed by the main clause, and the other by the *wie dan ook*-clause.

- (54) a. main clause:  $\phi$   
b. *wie dan ook* clause: wie dan ook  $P$

In ordinary *no matter*-constructions these two propositions are integrated in a conditional structure, as we saw above. In clause adpositions, instead, the *wie dan ook* clause is interpreted on its own: building on Dayal (2004) (and somewhat simplifying) we assume that it is connected to the main clause by wide scope conjunction (see also Potts, 2005):

- (55) a. No matter (unconditional): wie dan ook  $P \Rightarrow \phi$   
b. Clause adpositions:  $\phi \& \text{wie dan ook } P$

We further assume that *wie dan ook* adpositions always contribute a proposition. If the predicate  $P$  is not overtly given, as in the case of plain adpositions, it must be pragmatically supplied or syntactically reconstructed. We assume the following possible resolutions/reconstructions for  $P$  in these cases:

- (56) a.  $P$  is resolved to the predicate of the main clause  $\phi$   
b.  $P$  is reconstructed as *x mag zijn* ('x may be')

As we will see the first resolution is only possible if  $\phi$  is a FC licensing context, and will produce indifference meanings. The second resolution is only possible if  $\phi$  provides a proper antecedent for anaphor  $x$  and produces ignorance meanings. Let's have a closer look.

As we said, building on Dayal, we assume that in adpositions the *wie dan ook* clause is connected to the main clause by wide scope conjunction:<sup>14</sup>

- (57)  $\phi \& \text{wie dan ook } P$

Such construction requires a FC licensing operator in the *wie dan ook* clause, otherwise the second conjunct, analyzed as (58), would be contradictory.

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<sup>14</sup>Or maybe disjunction since many examples from the corpus have explicit *of* ('or'), but there are other possible explanations for this, e.g. *of* as adposition marker.

(58)  $[\forall] Op (\mathbf{exh}_{\langle s,t \rangle}[\text{wie dan ook}, \lambda x.\psi])$

For the cases of plain adjunction, if  $\phi$ , the main clause, contains such a FC licenser, we resolve  $Op$  and  $\psi$  in (58) to elements of  $\phi$  and obtain an indifference reading. Example (59) illustrates such a resolution:

- (59) a. Jij mag iemand, wie dan ook, uitnodigen voor het feest.  
 b.  $[\exists]\diamond([\text{iemand}, \lambda x.\text{you invite } x \text{ to the party}]) \& [\forall]\diamond(\mathbf{exh}_{\langle s,t \rangle}[\text{wie dan ook}, \lambda x.\text{you invite } x \text{ to the party}])$   
 c. Predicted meaning: ‘You can invite someone and you can invite anyone’

If  $\phi$  does not contain such licenser, we reconstruct  $P$  as ‘ $x$  mag zijn’, and we obtain an ignorance reading:

- (60) a. Jan, wie dan ook (hij mag zijn), is blij.  
 b.  $\text{happy}(j) \& [\forall]\diamond(\mathbf{exh}_{\langle s,t \rangle}[\text{wie dan ook}, \lambda x.x = j])$   
 c. Predicted meaning: ‘Jan is happy and Jan might be anyone’

To summarise, I propose the following analyses for the different uses of *wie dan ook* that were found in the diachronic corpus of Aguilar-Guevara *et al.* (2011):

1. No matter

- (61) a. Wie dan ook naar het feest komt; ik zal blij zijn.  
 b.  $[\forall](\mathbf{exh}_{\langle s,t \rangle}[\text{wie dan ook}, \lambda x.x \text{ comes to party}])(\lambda_i \Box_i \phi)$   
 ‘Whoever comes to the party; I will be happy.’

2. Adposition

- (62) Ignorance  
 a. Jan, wie dan ook (Jan mag zijn), is blij.  
 b.  $\text{happy}(j) \wedge [\forall]\diamond(\mathbf{exh}_{\langle s,t \rangle}[\text{wie dan ook}, \lambda x.x = j])$   
 ‘Jan, whoever he might be, is happy.’

- (63) Indifference  
 a. Jij mag iemand, wie dan ook (hij is), uitnodigen voor het feest.  
 b.  $[\exists]\diamond([\text{iemand}, \lambda x.\text{you invite } x \text{ to the party}]) \wedge [\forall]\diamond(\mathbf{exh}_{\langle s,t \rangle}[\text{wie dan ook}, \lambda x.\text{you invite } x \text{ to the party}])$   
 ‘You may invite somebody, anybody, to the party.’

3. Free Relative

- (64) a. Wie dan ook naar het feest komt zal blij zijn.  
 b.  $[\mathbf{Q}](\text{happy}(\mathbf{exh}_e[\text{wie dan ook}, \lambda x.x \text{ comes to party}]])$  (definite)

- c.  $[\forall]([\text{Q}](\text{happy}(\downarrow \text{exh}_e[\text{wie dan ook}, \lambda x.x \text{ comes to party}])))$  (universal)  
 ‘Whoever comes to the party will be happy.’

#### 4. Indefinite

- (65) a. Je mag wie dan ook uitnodigen voor het feest.  
 b.  $[\forall](\diamond(\text{exh}_{(s,t)}[\text{wie dan ook}, \lambda x.\text{you invite } x \text{ to the party}])))$   
 ‘You may invite anyone to the party.’

Again this provides a detailed analysis of the different phases of development of *wie dan ook* using different combinations of a small number of semantic operations. In the first *no matter* phase, the universal quantifier  $[\forall]$  is still part of a conditional structure, while in the adposition phase,  $[\forall]$  operates on an independent (adposed) proposition. We observe that in the adposition phase we have already all semantic ingredients of the later indefinite phase, but, in phase 2, ‘wie dan ook’ still contributes an independent proposition, not yet integrated in the main clause. We conjecture that the free relative phase facilitates the full integration we observe in phase 4 possibly triggering the shift from a “clausal” to a nominal use of the wh-compound.

### 4.3 Comparison

Comparing the Dutch data with the Spanish ones, we observe that the developments of *cualquiera* and *wie dan ook* appear to constitute evidence against unidirectionality in the acquisition of new functions: while the Dutch item was born with the *no matter* function, the Spanish item starts its development from a free relative into a plain indefinite and only later allows the *no matter* function to emerge.

DUTCH: no matter > adposition > free relative > indefinite

SPANISH: free relative > indefinite > no matter

Our semantic analysis does not make any prediction with respect to the directionality of development of these three uses but our conjecture concerning the emergence of  $[\forall]$ , namely that it is triggered by earlier universal-like uses of the wh-based form, does put constraints on possible development patterns. For example, if our conjecture is correct, the following developments are ruled out:

# indefinite > no matter > free relatives

# indefinite > free relatives > no matter

The following configuration instead is compatible with our conjecture but might still be implausible since a free relative phase might be required to trigger the shift from a clausal to a nominal use of the wh-form:

?? no matter > indefinite > free relatives

A very recent corpus-based diachronic research on Italian FC indefinite *qual si sia* showed that the emergence of this item between the 14th and the 17th century followed a path similar to that of Dutch *wie dan ook* (Degano, 2019):<sup>15</sup>

ITALIAN: embedded wh-clause > no matter > adposition > indefinite

The Italian data provide additional evidence that the adposition phase might be needed to trigger the separation of [V] from the conditional structure operative in the *no matter* phase. No free relative examples were found in this study, but the data were too few (a total of 55 examples) to draw any definitive conclusion concerning the role of these constructions.

In view of the evidence from Italian we might want to modify our conjecture about the development of Spanish free choice. The fact that two of the indefinites we could observe in “status nascendi” developed from a *no matter* use suggests the following new conjecture for Spanish with a *no matter* phase preceding the indefinite phase and then disappear to emerge again in a much later phase:

SPANISH (NEW): free relative, no matter/adposition > indefinite > no matter

If this is right,<sup>16</sup> we could assume that [V] is always inherited from a conditional construction with no need to posit universally read free relative uses. This hypothesis would still leave open the possibility that a free relative phase is needed for the grammaticalisation of the indefinite form but then only for morpho-syntactic reasons.

## 5 Conclusion

I defended an account of wh-based free choice items where free choice inferences are derived as semantic entailments in an alternative based semantics. I further presented an analysis of the different phases of development of Spanish *cualquiera* and Dutch *wie dan ook* using different combinations of a relatively small number of semantic operations and, inspired by diachronic findings, I conjectured (*contra*, e.g., Chierchia, 2013) that the universal-like flavour of these items derives from the application of an operation of universal (propositional) quantification which the item inherits from its source constructions: universally interpreted free relatives in the case of Spanish and *no matter* constructions in the case of Dutch (and Italian). To further refine this conjecture and test its predictions we would need to study the developments of many more wh-based FC indefinites, but this must be left to future work.

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<sup>15</sup>See Gianollo (2018); Napoli (2013) for other diachronic studies of Italian indefinites.

<sup>16</sup>Data from Company Company (2016) seem to confirm this hypothesis, see her example (12c) at page 523.

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