



# Indeterminate pronouns in Old English: a compositional semantic analysis

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**Abstract** Indeterminate pronouns in Old English (expressions like *hwa* ‘who/what’ and *hwelc* ‘which’) permit several interpretations in addition to their use as interrogative pronouns, for example readings as universal or existential quantifiers. They combine with morphological prefixes (*ge-* ‘and, also’ and *a-* ‘always, ever’), which change the range of possible interpretations. Old English indeterminate pronouns are shown to contribute a crosslinguistically hitherto unattested pattern of available interpretations. In particular, bare indeterminate pronouns have a universal interpretation and *ge*-indeterminate pronouns can be both universal and existential. This paper offers an alternative semantic analysis in the spirit of Hamblin (Found Lang 10:41–53, 1973) and Shimoyama (Nat Lang Semant 14:139–173, 2006). A compositional semantics is given for the pronouns and the prefixes, which derives the available readings. The paper ends with a proposal for compositional semantic change relating Old English indeterminate pronouns to their modern descendants.

**Keywords** Old English · Indeterminate pronouns · Alternative semantics · Quantification · Semantic change

## 1 Introduction

This paper offers a compositional semantic analysis of the interpretations of indeterminate pronouns in Old English (OE).

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Indeterminate pronouns, a term I use here in the sense of Shimoyama (2001) and Kratzer and Shimoyama (2002) (going back to Kuroda 1965), are pronominal expressions with typical uses as interrogative *wh*-pronouns. Frequently they, or morphological derivations based on them, have other uses, e.g. as indefinites, NPIs or universals. I provide an example from Japanese in (1) (from Shimoyama 2001) and an example from Latvian in (2) (from Kratzer and Shimoyama 2002). The term *indeterminate pronoun*, as opposed to *interrogative pronoun*, highlights that the pronoun can participate in other interpretations besides question interpretations.

- (1) a. *Yoko-wa dono hon-o yomimasita ka?*  
*Yoko-Top which book-Acc read Q*  
 ‘Which book did Yoko read?’  
 b. *Yoko-wa dono hon-mo yonda.*  
*Yoko-Top which book-MO read*  
 ‘Yoko read every book.’ (Shimoyama 2001)
- (2) a. *kur* ‘where’  
 b. *kaut kur* ‘somewhere’  
 c. *ne-kur* ‘anywhere’ (in the immediate scope of negation)  
 d. *jeb-kur* ‘anywhere’ (NPI and FCI) (after Kratzer and Shimoyama 2002)

Present Day English (PDE) *wh*-pronouns do not have uses as universal or existential expressions. But PDE’s ancestor Old English (OE)<sup>1</sup> had proper indeterminate pronouns, with derived forms and several possible interpretations. These forms and interpretations make them interesting semantically. I illustrate in (3) the relevant forms of *hwa* ‘who, what’<sup>2</sup>: in addition to the bare indeterminate pronoun (3a), there is a form with the prefix *ge-* ‘and, also’ *ge-hwa* (3b) and a form with the additional prefix *a-* ‘always, ever’ *æghwa* (3c) (see, e.g., Bosworth and Toller 1898/1921; Eienkel 1904; Kahlas-Tarkka 1987). (See Sect. 2 for a detailed explanation of the presentation of the examples.) Parallel forms exist for other indeterminate pronouns like *hwelc* ‘which’ and *hwær* ‘where’; I refer to them as the bare series, the *ge*-series, and the *a*-series of OE indeterminate pronouns.

- (3) a. *To hwam ga we*  
*to whom go we*  
 ‘To **whom** do we go?’ (interrogative)  
 (B&T; *ad quem ibimus?* Jn. Skt. 6, 68. The Gospel of St. John, edited by Skeat. v. Mk. Skt.)

<sup>1</sup> Roughly, OE refers to the language spoken in England between the 5th and the late 11th century. See, e.g., Fichte and Kemmler (2005).

<sup>2</sup> The orthography of OE was not standardized and various spellings exist for its indeterminate pronouns. In the text, I stick to *hwa* ‘who/what’, *hwelc* ‘which’, and *hwær* ‘where’, and similarly for the *ge-* and the *a*-series. In the examples, I reproduce the spelling from the source text.

- b. He    ðeoda            **gehwam**    hefonrice            forgeaf  
*he (of) people GE.whom heaven's kingdom gave*  
 'he to **everyone** of the people gave heaven's kingdom' (universal)  
 (B&T; 30; Th. 40, 19; The Anglo-Saxon version of the Holy Gospels, ed. B. Thorpe, London & Oxford 1842; Gen. 641. The Anglo-Saxon version of Genesis)
- c. Het            ic    **aeghwæt**    swa    don    swa    he us bebead,  
*ordered I A.GE-what so done so he us asked*  
 'I ordered that **everything** be done as he asked us.' (universal)  
 (K-T, Alex 41.8: Alexander's Letter to Aristotle, ed. S. Rypins in Three OE Prose Texts in MS Cotton Vitellius A XV, EETS, 161, 1924)

All three series participate in several different interpretations. For example, the bare series can, in addition to the interrogative interpretation (3a), lead to an existential and a universal interpretation (4a, b). The *ge*-series has a universal and an existential interpretation (5a, b). The *a*-series can, in addition to the universal reading in (3c), lead to an NPI interpretation (6a), but not, according to the available evidence, to a question meaning (6b) (see again the literature cited above).

- (4) a. (Nellap̃ hi gelyfan) ðeah    **hwa**    of deape    arise  
    *though who of death arose*  
 '(they will not believe,) though **one** rose from death' (existential)  
 (B&T; Homl. Th. i. 334, 21: The Homilies of Ælfric, edited by B. Thorpe for the Ælfric Society, London, 1844-1846. Quoted by volume, page and line. Bt. Met. Fox 10, 53; The Anglo-Saxon version of the Metres of Boethius. Met. 10, 27. The metres of Alfred)
- b. het            ða    hyssa            **hwæne**    hors    forlætan  
*ordered (he) then (of) warriors whom horse leave*  
 'he then ordered **everyone** of the warriors to leave his horse behind'  
 (K-T; The Battle of Maldon) (universal)
- (5) a. Oft            ic    sceolde    ana    **uhtna**    **gehwylce**    mine ceare    cwīpan  
*often I shall one morning GE.which my sorrows bewail*  
 'Often I must bewail my sorrows alone **every morning**' (universal)  
 (UTexas; The Wanderer)
- b. (Witodlice on ðære ealdan a,) Loð, and Iosue, and **gehwilce**    **oðre**  
    *Lot and Joshua, and GE-which others*  
 þe            englas            gesawon, (hi lutan wið heora, and to him gebædon,...)  
*that angels saw*  
 '(But in the ancient law,) Lot, and Joshua, and **certain others** who saw angels,  
 (bowed before them, and prayed to them,...) (existential)  
 (Thorpe 1844, 38)

- (6) a. And a. a. a.                    to worulde   buton   **æghwilcum**   **ende**   Amen  
*and ever ever ever*   *to world*   *without*   *A-GE-which*   *end*   *Amen*  
 ‘And ever, to time without end.’ (‘...without **any** end...’)                    (NPI)  
 (K-T; Ælfred’s Boethius, Sedgefield 1899, 149 (final prayer))
- b. unattested: *a*-series as interrogative pronouns:  
 To   **æghwam**   ga   we  
*to*   *A-GE-whom*   *go*   *we*  
 # ‘To **whom** do we go?’                    (\*interrogative)

The data raise interesting questions for semantic composition: What is the semantic contribution of the indeterminate pronoun? How does the sentence come to express a universal or existential statement or a question? What determines the range of possible sentence interpretations for a given indeterminate pronoun? These questions are the focus of the present paper.

The goal is to add to the existing literature on indeterminate pronouns a survey of the data from OE and their compositional semantic analysis, neither of which is available at present. We will see that OE provides an interesting case study, partially at odds with generalizations on indeterminate pronouns (see, e.g., Mitrovic 2014; Szabolcsi 2015 for recent discussion) and hence requires particular analytical tools.

My analysis is based on an alternative semantics for the indeterminate pronoun (e.g. Hamblin 1973; Shimoyama 2001; Kratzer and Shimoyama 2002)—indeterminate pronouns introduce alternatives into the semantics. Since each series of indeterminate pronouns participates in several different types of interpretation, the overt material doesn’t unambiguously determine sentence meaning. Covert operators quantify over the alternatives introduced by the indeterminate pronoun, yielding an overall sentence interpretation as existential, universal, interrogative and so on. Thus the covert existential, universal etc. operators are held responsible for determining the sentence interpretation, potentially yielding sentence level ambiguity.

The paper is structured as follows: In Sect. 2 I provide a detailed empirical discussion of the OE data, based on a systematic corpus search I conducted. The results of this empirical study are the input to the semantic analysis presented in Sect. 3, the alternative semantic analysis anticipated above. Section 4 explores some consequences of the analysis: on the one hand, the case study of OE is compared to what we know about systems of quantification crosslinguistically. On the other hand, my proposal analyses quantification in OE as more similar to (present day) Japanese than PDE; this raises the question of how PDE quantifiers like *each* and *every* could develop diachronically from OE indeterminate pronouns. I conclude with a suggestion concerning the diachronic development of universal quantifiers, the Universal Semantic Cycle (Beck 2017, 2018). Section 5 provides a short summary of the paper.

## 2 OE indeterminate pronouns: an overview of the data

The following sections lay out the possible interpretations for the three series of indeterminate pronouns in OE. In very general terms, the information presented in this section can be found in classical sources such as Bosworth and Toller (1898/1921), Einkenel (1904), Wülfing (1894–1901), Kahlas-Tarkka (1987), and others. But the philological works do not use the concepts of modern linguistic theory or the standards of explicitness in compositional semantics. Hence I proceed in the following way:

I put together a data set by systematically searching the YCOE corpus (Taylor et al. 2003) for occurrences of indeterminate pronouns. What I present in this section is mostly examples extracted by this search from OE1 or OE2 files (that is, early OE) in the YCOE corpus. The data I present below from that sample are presented with the YCOE reference (the file name, the text, and the identification of the token). (See the “[Appendix](#)” for more information on the relevant YCOE files.) I concentrate on the indeterminate pronouns *hwa*, *hwelc*, *gehwa*, *gehwelc*, *æghwa*, *æghwelc*, and *ælc*.

This sample is occasionally supplemented by other data which are particularly telling for the issue at hand. For example, I sometimes add data with the indeterminate pronouns *hwær* ‘where’ and *hwæðer* ‘which of the two’ from the same YCOE files. Also, Bosworth and Toller and Kahlas-Tarkka, for instance, present a lot of examples, though they are not glossed and often there is no translation. Where I take an example from Bosworth and Toller, I indicate this in the example, abbreviated as B&T, and include reference to the OE text which they provide as the source of the example, for the convenience of the reader. Similarly, examples from Kahlas-Tarkka, which I abbreviate as K-T in the examples, are also provided with her identification of the original source text. Occasional examples are from University of Texas OE online lessons by Jonathan Slocum and Winfried P. Lehmann, abbreviated UTexas, with reference to the original source text.

I classify the interpretations of the sentences with the indeterminate pronouns according to modern linguistic theory. The interpretations I distinguish are question, free choice relative clause (FCR), free choice item (FCI), negative polarity item (NPI), universal, and existential.<sup>3</sup> The classical works on OE tell us that these are interpretations to look out for. The question is which indeterminate pronouns participate in which interpretations.

For each prospective interpretation, I provide example sentences illustrating this use, as unambiguously as possible. In order to classify an interpretation, I infer the contribution of the indeterminate pronoun to the sentence meaning from the proposition expressed by the sentence. The composition of the propositional

<sup>3</sup> Further distinctions can certainly be made theoretically, for example further types of relative clauses, and subdivisions of indefinites according to licensing conditions and scope preferences (e.g. strong/weak NPI, PPI, modal indefinite). I hope that the readings I identify will prove a useful starting point.

interpretation of the sentence, in turn, is inferred from the syntactic structure (here I am aided very significantly by the YCOE parse tree), the lexicon (here I rely specifically on the Bosworth and Toller dictionary), and the OE text, which provides a context.

Mostly, translations of the OE text passage with the indeterminate pronoun into modern English are available. Where the translation is sentence by sentence, they tell us which propositional interpretation the translator assigned to the sentence with the indeterminate pronoun. Since an adequate translation preserves propositional meaning (see, e.g., Kamp 1978 for an early explicit discussion), this can be an indication of the proposition expressed by the OE sentence. It is not necessarily the case, though, that the translation indicates how the occurrence of the indeterminate pronoun is to be classified semantically; to give a simple example, the indeterminate pronoun is sometimes not literally translated at all (e.g. when an expression contributing ‘every year’ is translated as ‘annually’). In general terms, the existing translations provide a useful context for the example.

In my presentation, I use translations to help indicate to the reader the interpretive contribution of the indeterminate pronouns, i.e., to explain how the example is classified. The translations I provide for this purpose track the semantic analysis; that is, the translation of the pronoun matches the semantic classification. Where such a literal translation is available in the existing literature, I use the existing translation and cite its source. Often, this is the translation from YCOE’s source edition (e.g., Liebermann 1903 for the Laws of Alfred, and Sweet 1958 for the Cura Pastoralis in (7) below). (See the “Appendix” for details on the YCOE files and their source texts.) Where existing translations do not track the semantic analysis, I add my own translation. Where no useful modern English translation is available to me, I provide my own. The glosses of the OE examples (also helpful indicators to the reader of the compositional ingredients of the sentence) are mine.

The collection of data in the following subsections represents all interpretations of the indeterminate pronouns investigated that I found in my sample, which is compatible with the interpretations identified in general terms by the existing descriptive literature.

Section 2.1 presents the data for the bare series, Sect. 2.2 for the *ge*-series, and Sect. 2.3 for the *a*-series including *wlc*. I summarize the empirical results in Sect. 2.4.

## 2.1 The bare series

Let us begin by examining the interpretive options of *hwa* ‘who/what’. The literature mentions a range of interpretations for sentences in which this item occurs, which are reflected in my data sample and which (7) illustrates. In addition to the prominent interrogative (7a) and FCR (7b) uses, we find the existential (7c) and universal (7d) interpretations seen in Sect. 1.

- (7) a. Gif he nyte, **hwa** hit stæle, geladige hine selfne,  
*if he neg.know who it stole clear him self*  
 þæt he ðær nan facn ne gefremede.  
*that he there neg.one deceit not commit*

(colawafint, LawAfEl:28.73)

‘If he doesn’t know **who** stole it, let him clear himself that he didn’t commit deceit.’ (interrogative)

Wenn er nicht weiss, wer sie stahl, reinige er sich selbst, dass er keinen Betrug daran verübte. (Liebermann p. 37)

- b. Sua **hwa** ðonne sua his lif to biesene bið oðrum  
*so who then so his life to example is (to) other*  
 monnum geset, ne sceal he no ðæt an don ðæt  
*men set neg shall he not that one do that*  
 he ana wacie,  
*he alone wake*

(cocura, CP:28.193.19.1293)

‘**Whoever**, then, makes his life an example to others must not only himself keep awake.’ (Sweet)

(FCR)

- c. & on ðæm chore beoð manige menn gegadrode  
*and in the dance are many men gathered*  
**anes hwæt** to singanne anum wordum & anre stefne.  
*(of) one what to sing (with) one word and one voice*

(cocura, CP:46.347.4.2336)

‘and in the dance a number of men are assembled to sing **something** with the same words and voice.’ (Sweet)

(existential)

- d. & ðonne ðæt mod bið on monig todæled, hit bið  
*and when the mind is in many divided it is*  
 on **anes hwæm** ðe unfaestre, & eac ðe unyttre.  
*in (of) ones whom the more unfirm, and also the more useless*

(cocura, CP:4.37.13.190)

‘and when the mind is divided among many objects it is the less firm in

**each**, and also less useful.’ (Sweet)

(universal)

The interpretations in (7a) and (7b) as interrogative pronouns and *wh*-pronouns in FCR are well-known and fully expected. Similarly, the interpretation as an existential indefinite in (7c) is unsurprising and well-documented in OE (see also, e.g., Wülfing 1894–1901 for the time period documented here). The universal interpretation in (7d) is rarer and less expected crosslinguistically (e.g., Szabolcsi 2015), but it is documented in the descriptive literature (e.g., Kahlas-Tarkka, Wülfing, Bosworth and Toller) and it occurs in my sample, as (7d) shows.

There are uses of *hwa* in contexts in which FCIs and NPIs are licensed. Such uses and their translations have attracted attention in the descriptive literature, and so I

discuss them here. (8a) and (8b) provide examples of potential FCI and NPI uses of *hwa* respectively.

- (8) a. *ðeah hwa wene ðæt he on hiora anra hwylcum mæge habban  
though who thinks that he in (of) those ones which may have  
fulla gesælþa, (ne biþ hit no ðy hræðor swa,...)  
full felicity,*

‘though **anyone** thinks that he can have perfect felicity in any one of them, (it is nonetheless not so,...)’ (FCI context)

(B&T; Bt. Met. Fox 17; The Anglo-Saxon version of the Metres of Boethius Meter17; Translation: The Old English Boethius, S. Irvine and M.Godden 2012, Harvard University Press)

- b. *Gif hwa to hwæðrum þissa genied sie on woh,  
if one to either (of) those forced be wrongfully,  
oððe to hlafordsearwe oððe to ængum unryhtum  
either to treason against a lord or to any wrongful  
fultume, þæt is þonne ryhtre to aleoganne þonne  
assistance, that is then more right to refuse than  
to gelæstanne.*

*to render*

(colawaf, LawAf\_1:1.1.3)

‘If **anyone** was forced into either of those wrongfully, either to treason against a lord or to any wrongful assistance, it is then better to refuse that than to render.’

Wenn einer [allerdings] böser Weise gezwungen worden ist, zum [Versprechen] eines der beiden [Verbrechen], entweder zum Herrenverrath oder zu irgendeiner widerrechtlichen Beihilfe, das ist dann richtiger zu weigern als zu leisten.

(Liebermann p. 48) (NPI context)

Note, though, that (7c) is an example of an existential interpretation in which the indeterminate expression is not in a downward entailing context, hence not in a context licensing NPIs (e.g., Ladusaw 1979). Similarly, (4b) is an example of a universal interpretation in an episodic sentence without a modal or a generic interpretation, hence not a context licensing an FCI (e.g., Menéndez-Benito 2010). Thus I take genuine existential and universal readings to be available for *hwa*, in addition to the obvious uses as interrogative and free relative pronoun.

But given that universal and existential interpretations outside of FCI and NPI contexts are possible, the data in (8a, b) (despite their translations as NPI and FCI *anyone*) do not as such establish the need for FCI and NPI analyses of *hwa*. A narrow scope existential is truth conditionally indistinguishable from a (weak) NPI, and so (8b) could simply be a plain narrow scope existential. Similarly, (8a)



could be a universal interpretation. The fact that *hwa* is acceptable in contexts that license FCIs (a generic context in (8a)) and NPIs (an *if*-clause in (8b)) merely shows that the data are compatible with such analyses. We will come back to this point in Sect. 3.

Other bare indeterminate pronouns share the interpretive possibilities of *hwa*. I concentrate on *hwelc* ‘which’ and add the occasional example with other indeterminate pronouns (*hwær* ‘where’ and *hwæðer* ‘which of the two’ in the examples below). A note on terminology: the indeterminate pronoun is the lexical item, e.g., *hwelc*. Together with a noun or NP, *hwelc* forms an indeterminate phrase (which can, for instance, be a *wh*-phrase in a question). Both terms are used below, though the distinction doesn’t much matter. (9) illustrates the same range of readings that we have seen for *hwa* for the other indeterminate pronouns.

- (9) a. ac we nyton **hwelc** hira inngedonc bið beforan  
*but we neg.know which their thought is before*  
 ðæm ðearlwisan deman on ðæm dieglan edleanum.  
*the severe judge in the hidden requital*  
 (cocura,CP:16.105.8.692)  
 ‘we know not **what** their thoughts are before the severe Judge with his hidden requital.’ (Sweet) (interrogative)
- b. Gif he gewite er ðonne hia, his barna **sue hwelc sue**  
*if he die earlier than her, his children whichever*  
 lifes sie agefe ðet feoh ond atee sue hit soelest  
*alive are give that property and dispose so it best*  
 sie for ða hit begetan.  
*be for them it obtained*  
 (codocu2,Ch\_1200\_[HarmD\_7]:9.20)  
 ‘If he die before her, **whichever** of his children is alive is to pay the money and dispose of the estate in whatever way is best for those who have acquired it.’ (Harmer VII p. 45) (FCR)
- c. & oft ðeah gebyreð ðæm geðyldgan, ðeah him mon  
*and often though happens (to) the patient though him one*  
 hwæt widerweardes doo, oððe he **hwelce scande** gehiere  
*what hurtful do or he which disgrace hear*  
 bi him selfum, ðæt he ðonne nawuht æt ðam  
*concerning him self that he then not at that*  
 cierre ne bið onstyreð, ac gebærð sua geðyldlice  
*time neg be stirred, but behaves so patiently*  
 suelce he hit hæbbe mid ealre heortan forlæten.  
*such he it have with all heart dismissed*  
 (cocura,CP:33.225.15.1473)  
 ‘And yet it often happens to the patient man that, although he suffers some wrong or hears **some shameful report** of himself, he is not agitated at the time, but comports himself patiently, as if he had dismissed it altogether from his heart.’ (Sweet) (existential)

- d. (i) Hie ða gesetton, for ðære mildheortnesse þe  
*they then set, for that mercy that*  
 Crist lærde, æt **mæstra hwelcre** **misdæde** þætte  
*Christ taught, for almost which misdeed that*  
 ða weoruldhlafordas moston mid hiora leafan buton  
*the worldly lords should with their leave without*  
 synne æt þam forman gylte þære fiohbote onfon,  
*sin at the first offence that compensation take*  
 þe hie ða gesettan.  
*that they then set*

(colawafint, LawAfEl:49.7.135)

'They then ruled, for the mercy that Christ taught, for **almost every misdeed**, that the worldly lords should with their leave without any sin on the first offence accept pecuniary compensation, that they then set.'

Sie setzten da fest (um jener Barmherzigkeit willen, so Christus gelehrt hatte) bei den meisten Missethaten, dass mit ihrer Genehmigung [und] ohne Sünde [der Pflichtverletzung] die weltlichen Herren [als Richter] bei dem erstmaligen Vergehen diejenige Geldbusse annehmen dürften, welche sie nunmehr festsetzen; (Liebermann pp. 45, 47)

(*universal*)

- (ii) Ond ic bebiode on Godes naman þæt nan mon  
*and I command in God's name that no man*  
 ðone æstel from ðære ne do, ne ða boc from  
*the clamp from there not do not the book from*  
 ðæm mynstre: uncuð hu longe ðær swæ gelærede  
*the minster unknown how long there so learned*  
 Biscepas sien swæ swæ nu Gode ðonc **wel hwær** siendon;  
*bishops are so as now (to) God thanks almost where are*

'And I command in God's name that no man take the clamp from the book or the book from the minster: It is uncertain how long there may be such learned bishops as now, thanks be to God, there are **nearly everywhere**.'

(introduction CP; Sweet p. 8)

(*universal*)

Note that the combination of 'almost' with the indeterminate pronouns in (9d) identifies a universal interpretation (cf. *I talked to almost every girl / \*almost some girl*). Another such example is given in (9').

- (9') (Þa æt sumum cirre þæs ilcan geares comon þær sex scipu to Wiht,  
 ond þær mycel yfel gedydon, ægðer ge on Defenum)  
 ge **wel hwær** be ðæm særiman.  
*and almost where by the seacoast*

(At a certain time of the same year there came six ships to (the Isle of) Wight, and did much mischief there, both in Devonshire)

'and **almost everywhere** near the seacoast.'

(*universal*)

(UTexas, Alfred's war with the Danes; in: Charles T. Onions, ed. 1959.

*Sweet's Anglo-Saxon Reader in Prose and Verse*, 14th edition, Oxford: Clarendon, p. 37)

The interesting ambiguity of the bare series in non-*wh*-contexts between existential and universal interpretation is documented in particular for *hwæðer* 'which of the two' (e.g., Bosworth and Toller). In addition to interrogative and free relative uses, this indeterminate pronoun can contribute 'one of the two' or 'both of the two'. An

example of the first interpretation is given in (10c), an example of the second in (10d). In both examples, only one of the two interpretations makes sense in the context. For completeness, (10a) and (10b) exemplify interrogative and FCR uses, respectively, of this indeterminate pronoun.

- (10) a. **Hwæðres** ðonne ðara yfela is betere ær to tilianne,  
*wh.either then (of) the evils is better earlier to attend*  
 buton swæðres swæðer frecenlicre is?  
*unless such (of two) as (of two) more dangerous is*  
 (cocura,CP:62.457.21.3299) (interrogative)  
 ‘Which then of the evils ought rather to be attended to, if not the most dangerous?’  
 (Sweet)
- b. **Suæ hweðer hiora** suæ leng lifes were foe to londe  
*so wh.either (of) them as long life’s be take to land*  
 & to alre æhte.  
*and to all property*  
 (codocu1,Ch\_1500\_[Rob\_3]:3.82) (FCR)  
 ‘whichever of them who may be alive longer is to inherit the land and all property’  
 (Translation: Charles Merritt Carlton 1970. Descriptive syntax of Old English  
 Charters. Mouton, The Hague)
- c. **Ðonne is micel ðearf, ðonne him mon ðissa tuega hwæðer**  
*then is much need when him one (of) these two wh-either*  
 onðrætt suiður ðonne oðer, & wið ðæt wiendð, ðæt he  
*dreads more than other and against that strives that he*  
 sua suiðe wið ðæt winne sua he on ðæt oðer ne  
*so much against that strive so he in the other not*  
 befealle, ðe he him ær læs ondred.  
*fall that he him earlier less dreaded*  
 (cocura,CP:27.189.9.1260) (existential)  
 ‘And it is very necessary, when a man dreads **either of these two** more than the other,  
 and strives against it, that he strive not so earnestly against it as to fall into the other,  
 which he formerly dreaded less.’ (Sweet)
- d. **dæle he hwæðre** ðæt, healf cyninge in ða scire  
*divide he (of) wh.either this, half the king in the shire*  
 ðe he ær folgode, healf in þa ðe he oncymð.  
*that he earlier served, half in that that he arrives*  
 (colawaf,LawAf\_1:37.1.124) (universal)  
 ‘distribute he this to **both**, half to the king in the shire in which he served earlier,  
 half in the one in which he now comes.’  
 und zwar vertheile er dies dem Könige halb in die Grafschaft, welcher jener [Mann] bisher untergeben  
 war, und halb in die, in welche derselbe [jetzt] hinkommt. (Liebermann p 71)

Regarding potential FCI and NPI uses of indeterminate pronouns other than *hwa*, the same comment applies as in the case of (8a, b). Pertinent examples are given in (11) (also (8b) for *hwæðer*). (11a) is a generic context, and the indeterminate phrase could plausibly also have been rendered as ‘any evil’. In (11b) both indeterminate phrases occur in the antecedent of a conditional, an NPI licensing context; context and interpretation are compatible with a use comparable to plain indefinite ‘a’ and NPI ‘any’. Observation cannot decide between the two analyses; see Sect. 3 for theoretical discussion.

- (11) a. Se sit, swelce he sitte on ðæm stole ðæs forhwierðan  
*who sits, as he sits on the chair (of) the perverse*  
 gemotes, se ðe hine upahefeð on ða ofermetto  
*assembly who that him elevates in the arrogance*  
 swelcre unryhtwisnesse ðætte he fullfremme **hwelc yfel**  
*such unrighteousness that he fulfills which evil*  
 huru ðurh geðeaht.  
*certainly by design*  
 (cocura,CP:56.435.24.3093)

'He sits, as it were, in the chair of the perverse assembly, who exalts himself with the pride of such unrighteousness that he perpetrates every evil designedly.'

(Sweet) ('... **any evil...**') (FCI context)

- b. gif **hwelc mon** cirican gesece for ðara gylta **hwylcum**,  
*if which man church seeks for (of) these crimes which*  
 þara ðe ær geyped nære, & hine ðær on Godes  
*these that earlier revealed not.were, and them there in God's*  
 naman geandette, sie hit healf forgifen.  
*name confess, be it half forgiven*  
 (colawaf,LawAf\_1:5.4.34)

'If **a man** seeks a church because of **any of these crimes** which was not revealed earlier, and confesses it there in God's name, it be half forgiven.' (NPI context)

Wenn jemand eine Kirche aufsucht, wegen einer jener Verschuldigungen, die früher nicht offenbar war, und sie dort in Gottes Namen bekennt, sei es halb vergeben. (Liebermann, p. 53)

To give the reader an impression of some uses of bare indeterminate pronouns in context, the short text in (12) and its translation illustrate that the bare series is compatible with several interpretations—in (12) first an FCI or universal interpretation and then an NPI or existential interpretation. The short text in (13) illustrates that indeterminate pronouns of different series are able to express the same meaning, here: universal quantification, expressed by an *a*-series expression and a bare indeterminate pronoun.

- (12) Boethius Meter 17 (Translation: The Old English Boethius, S. Irvine and M.Godden):

ðeah **hwa** wene ðæt he on hiora **anra hwylcum** mæge habban fulla gesæltha,  
 ne biþ hit no ðy hræðor swa, ðeah hi his wilnigen, buton hi ða fif ealle  
 habban." Ða andsworede ic and cwæð: Hwæt sculon we þonne don nu ðu  
 cwist ðat we ne mægen on ðara **anra hwylcum** ðat hehste good habban and  
 fullan gesæltha, ne we huru ne wenap ðat ure **anra hwelc** ða fif eall ætgædre begite?"

though **anyone**<sub>FCI</sub> thinks that he can have perfect felicity in **any one of them**<sub>FCI</sub>, it is nonetheless not so, though they desire it, unless they have all five." Then I answered and said: What then ought we to do, now that you say that we cannot have the highest good and the perfect felicity in **any one of them**<sub>NPI</sub>, and we certainly do not think that **any one**<sub>NPI</sub> of us may get all five together?"

- (13) Boethius Meter 20 (Translation: The Old English Boethius, S. Irvine and M. Godden):

Habbap ðea ða feower frumstol hiora, **æghwilec** hiora agenne stede, ðea **anra hwilc** wið oðer sie miclum gemenged and mid mægne eac fæder ælmihtiges fæste gebunden,...

Yet **each** of the four have their birthplace, their own station, though **each of them** may be greatly mingled with the other and by the might of the father almighty also bound fast,...

**In sum**, we see that bare indeterminate pronouns can be used as interrogatives in questions and in FCR, as existential and universal quantifiers, and that they occur in FCI and NPI contexts.

## 2.2 The *ge*-series

Next we turn to indeterminate pronouns of the *ge*-series. Etymologically, the *ge*-series consists of a bare indeterminate pronoun with the morpheme *ge-* as a prefix. As a lexical item, *ge* is an additive particle meaning ‘and, also’ (e.g., Kahlas-Tarkka 1987). We want to know whether the *ge*-series has the same range of interpretive possibilities as the bare series or, if not, how it is different. Since the preceding subsection has provided an overview of the relevant interpretations, I sort the examples by interpretive options in this subsection. I look at the indeterminate pronouns *ge-hwa* and *ge-hwelc*, supplemented by *ge-hwær* and *ge-hwæðer* (glossed as ‘GE-who/what’, ‘GE-which’, ‘GE-where’, and ‘GE-wh-either’).

It is clear from the available literature (e.g., Kahlas-Tarkka 1987) that the *ge*-series is one of OE’s universal quantifiers and that it also supports existential interpretations. Universal interpretations are illustrated in (14) and existential interpretations in (15). (See once more the “[Appendix](#)” for a description of the YCOE files and their source editions.)

- (14) *universal*:

a. Ac gif þu wilt beon heora þegn þonne scealt þu georne  
*but if you want be their servant then shall you willingly*  
 geðolian **gehwaet** þæs þe to heora þenungum & to  
*do GE.what which that to their service and to*  
 hiora þeawum & to heora willan belimpet.  
*their obedience and to their will belongs*

(coboeth,Bo:7.16.21.253)

‘If however thou art desirous to be its servant, thou must needs do cheerfully what belongs to its service, in obedience to its nature and its will;’ (Kiernan, et al. 2002: Alfred the Great’s Boethius: An Electronic Edition; [www.uky.edu](http://www.uky.edu))

‘But if you want to be their servant then you must willingly do **everything** that belongs to their service and to their obedience and to their will.’

- b. Swa þonne her fram þære arleasan ðeode, hwæðere rihte  
*so then here from that impious people though just*  
 Godes dome, **neh ceastra gehwylce** & land  
*God's judgement near (of) cities every (pl) and land*  
 forheregeode wæron.  
*wasted were*

(cobede,Bede\_1:12.52.27.487)

‘So then here **almost every city** and district was wasted by this impious people, though it was by the just judgment of God.’ (Miller)

- c. Suiðe ryhte ðæt hrægl is gehaten, ðæt se sacerd beran  
*very right the robe is called that the priest bear*  
 sceolde ðæs domes racu, forðam se sacerd scolde & git  
*must (of) the judgement account because the priest had to & yet*  
 sceal simle smealice geðencean ðæt he cunne god &  
*has to always carefully consider that he know good and*  
 yfel tosceadan, ond siððan geornlice geðence hu he  
*evil distinguish and then earnestly think how he*  
**gehwelcne** læran scyle & hwonne, & hwæt him gecopust  
*each teach must and when and what them most fit*  
 sie, & nowuht him selfum synderlice wilnige, ac  
*is and not him self separately ask but*  
 his niehstena god he sceal tellan him selfum.  
*his neighbours' good he must consider him self*

(cocura,CP:13.77.22.515)

‘Very rightly the priest’s robe is called the account of judgment, because the priest was bound and still is ever to consider how he can discern good and evil, and then to consider carefully how and when he is to teach **each one**, and what is most profitable for them, and not desire to appropriate anything to himself only, but reckon the prosperity of his neighbours as his own.’ (Sweet)

- d. Gif þonne hryðera hwelc sie þe hegas brece & ga in  
*if then (of) cattle which is that hedges break and go in*  
**gehwær**, & se hit nolde gehealdan, se hit  
*GE.where and that it neg.will hold that it*  
 age oððe ne mæge, nime se hit on his æcere mete  
*owns or not may take that it on his field finds*  
 (colawine,LawIne:42.1.113)

‘But if [it] is one of the cattle that breaks hedges and goes **everywhere**, and he will not hold them who owns them, or he cannot, let him take it who finds it on his field’

Wenn [der Schadenstifter] jedoch eines der Rinder ist, das Gehege [gewaltsam] bricht und überall eindringt, da der Eigenthümer es nicht halten wollte oder kann, so nehme [es] wer es auf seinem Acker trifft (Liebermann p. 109)

(15) *existential*:

- a. Ne heold he no þa Eastran, swa swa sume men  
*neg held he not the Easter so as some men*  
 wenað, mid Iudeum on feowertynenihtne monan  
*think with Jews on fourteenth moon*  
**gehwylice dæge** on wucan, ac a symle on  
*GE.which day in week but ever always on*  
 Sunnandæge fram feowertynenihtum monan oð twentigesnihtne,  
*Sunday from fourteenth moon up to twentieth night*  
 for þam geleafan þære Dryhtenlican æriste,...  
*for the belief (of) the lordly resurrection,...*

(cobede,Bede\_3:14.206.27.2104)

‘He did not keep Easter, as some imagine, in agreement with the Jews, on the fourteenth night of the moon on **any day** of the week, but always on Sunday, from the fourteenth night of the moon up to the twentieth night, from belief in our Lord’s resurrection,...’ (Miller)

- b. & brohte of his weorce **gehwylice** grene &  
*and brought of his work GE.which green and*  
 wel stincende wyrta.  
*good smelling herbs*

(cogregdC,GDPref\_and\_3\_[C]:1.181.16.2225)

‘and brought from his work **some** green and pleasantly smelling herbs.’

‘und brachte von seiner Arbeit wohlriechende und frische Kräuter’

(Translation: Des heiligen Papstes und Kirchenlehrers Gregor des Grossen vier Bücher Dialoge/ aus dem Lateinischen übers. von Joseph Funk. Des heiligen Papstes und Kirchenlehrers Gregor des Grossen ausgewählte chriften Bd. 2; Bibliothek der Kirchenväter, 2. Reihe, Band 3) Kempten; München: J. Kösel: F. Pustet, 1933. 3. Buch Kapitel I. <http://www.unifr.ch/bkv/kapitel3223.htm>)

- c. Hwæt: we witon, þæt þæt is læsse, þæt man wite **gehwæt**  
*what: we know, that that is less, that one know GE.what*  
**hwylces**, þonne þæt sy, þæt his man wite & eac bodie:  
*(of) which than that be, that of it one know & also declare:*

(cogregdC,GD\_2\_[C]:16.138.1.1659)

‘We know that it is less that one knows **something** of a thing, than it is, that one knows of it and also declares it.’

The existential interpretation is rarer than the universal interpretation. Since the *ge*-series is infrequent to begin with, I include with (15b, c) two data points from Gregory’s Dialogues, identified in YCOE as OE24, meaning that the text is from OE2 though the manuscript is from OE4. Example (15b) clearly shows an existential *ge*-pronoun in a non-NPI-context (while (15a) is an NPI licensing context, negation—see below).

I add the data points in (16) and (17). (16) with *gehwar*, though from a period later than OE1/2, is an attractive example because it obviously only makes sense if the indeterminate pronoun is interpreted existentially. (16), like (15b), documents the possibility of existential *ge*-pronouns outside NPI licensing contexts. (17) illustrates both universal and existential interpretations of *gehwæðer*.

- (16) **Gehwar** hi syn hefige **gehwar** eac medeme  
*GE.where they are heavy GE.where also moderate*  
 ‘in **some** places they are heavy, in **others** moderate’ (existential)

an einem Ort sind sie schwer, anderswo auch mässig.

(Liebermann p. 446 (Rectitudines singularum personarum AD 960-1060 c.1025?))

- (17) a. Gif mon bið on hrif wund, geselle him mon  
*if one is in body wounded give him one*  
 XXX scillinga to bote. Gif he ðurhwund bið,  
 30 shillings to compensation if he gored through is  
 æt **gehweðerum muðe** XX scillinga.  
*for GE.wh.either mouth 20 shillings*  
 (colawaf, LawAf\_1:61.182)

‘If someone is wounded on the body, give him 30 shillings as compensation. If he is gored through, for **each wound** 20 shillings.’ (universal)

Wenn jemand am Bauch verwundet ist, gebe man ihm 30 Schill. zur Busse. Wenn er durchbohrt ist, [dass die Waffe herausfährt], für jede der beiden Öffnungen 20 Schill.

(Liebermann p. 82)

- b. Gif þonne sie on **gehwæþere** healfe þa ceacan aswollen  
*if then is on GE.wh.either side the cheek swollen*  
 & sio þrotu & þu þa tacn geseo þonne sona læt  
*and the throat and you the sign see then soon let*  
 þu him blod on ædre.  
*you him blood on vein*  
 (colaece, Lch\_II\_[1]:4.4.11.488)

‘If then the cheeks are swollen on **either** side, and the throat, and you see those signs, then immediately you bleed him on a vein,’

(Doyle 2017) (existential)

As we see in (15a) and (17b), the *ge*-series can be used in NPI contexts (here, a negated sentence and the antecedent of a conditional). In (15a), the domain widening component typical of a polarity sensitive item (e.g., Kadmon and Landman 1993; Chierchia 2006) is intuitively the focus of negation. That is, intuitively a translation as ‘ANY day of the week’ is appropriate (with focused *any*, a strong NPI (Krifka 1995)). Thus (15a) is indicative of a genuine NPI use. We return to the issue of possible NPI uses of the *ge*-series in Sect. 3.

The *ge*-series, like the bare series, shows up in contexts appropriate for FCI, as seen, for example, in (14a) (a modal context). (18) provides examples in which *gehwa* was translated, very intuitively, as an FCI into modern English.



- (18) a. & ic **gehwa** wille þærto tæcan þe hiene his lyst  
*and I GE.who shall thereto direct that him (of) it like*  
 ma to witanne.  
*more to know*

(coorosiu,Or\_3:3.57.13.1105)

‘and I shall direct **anyone** to it who would like to know more about it’  
 (The Cambridge History of the English language, Vol. I, ed. Hogg,  
 Richard M. (1992, Cambridge, CUP)

- b. þæt is þonne heora biwist: land to bugianne, &  
*that is then their provisions land to inhabit and*  
 gifta, & wæpnu, & mete, & ealo, & clapas, &  
*gifts and weapons and meat and ale and clothes and*  
**gehwæt** þæs ðe þa þre geferscipas behofiað.  
*GE.what (of) that that the three classes need*  
 (coboeth,Bo:17.40.21.741)

‘and these means are land to dwell in, gifts, weapons, meat, ale, clothing,  
 and **what else soever** the three classes need.’ (Kiernan et al. 2002: Alfred  
 the Great’s Boethius: An Electronic Edition; [www.uky.edu](http://www.uky.edu))

Since (14b, c) provide examples of plain universal interpretations, these examples could be analysed either as FCI or as ordinary universals. See again Sect. 3 for discussion.

What we have not seen is uses of the *ge*-series as *wh*-expressions in questions and in FCR. The literature (e.g., Bosworth and Toller 1898/1921; Kahlas-Tarkka 1987) does not describe such uses; an exception is Wülfing (1894–1901), who notes one potential use of *gehwelc* and one potential use of *æghwelc* in an interrogative function (for *æghwelc*, see the next section). A global search of all YCOE files (i.e., including the files not from OE1 or OE2) for *gehwa* and *gehwelc* as *wh*-expressions in questions or relative clauses yielded (among 502 hits for the two pronouns combined) the two hits—(19) and (20) below—and (21) is Wülfing’s example.

- (19) Se ðe stalað on Sunnanniht oððe on Gehhol oððe on Eastron  
*who that steals on Sunday or on Christmas or on Easter*  
 oððe on ðone halgan Þunresdæg on Gangdagas: ðara  
*or on the holy Thursday on Perambulation days: (of) those*  
**gehwelc** we willað sie, twybote swa on lencenfæsten.  
*GE.which we want be double compensation as on the fast of Lent.*  
 (colawaf,LawAf\_1:5.5.35)

‘Whoever steals on Sunday or at Christmas or at Easter or on the holy Thursday  
 on Perambulation days: **every** one of these we want to be double compensation,  
 and so on the fast of Lent.’

Wer stiehlt am Sonntage oder zu Weihnachten oder zu Ostern oder am heiligen Donnerstag  
 in den Betfahrtstagen, deren jeder stehe, wollen wir, in Doppelbusse, ebenso wie zu  
 Frühlingsfasten. (Liebermann p. 53)

- (20) Gif hit riht sy þæt we to deoflum us gebiddon  
*if it right is that we to devils us pray*  
 swiðor ðonne to þam ælmihtigan Gode: deme **gehwa** þæs  
*rather than to the almighty God judge GE.who (of) the*  
 wurðmyntes wyrþe sy: se þe geworht is: oððe se þe ealle  
*honour worthy be who that made is or who that all*  
 þing gesceop.  
*thing created*

(cocathom1, + ACHom\_I\_29:422.118.5725)

‘if it be right that we should pray to devils rather than to the almighty God, then judge **who** is worthy of that honour, he who is made, or he who created all things.’ (Thorpe 1844)

- (21) Swyðe fela hi me sædon fram **gehwylcum** biscopum, &  
*very much they (to)me said off/about GE.which bishops, and*  
**hwylcum** cyninga tidum Eastseaxe & Westseaxe &  
*which kings’ times East Saxons and West Saxons and*  
 Eastengle & Norðanhumbre þære gife onfengon Cristes geleafan.  
*East Angles and Northumbrians the gift received (of) Christ’s faith*  
 (cobede,BedePref:4.7.163)

‘They told me very much as to the bishops and the dates of the kings, under whom the East Saxons, West Saxons, East Angles and Northumbrians received the grace of Christ’s faith.’ (Miller)

Let’s examine the three examples in turn. The first example (19) is simply mislabeled: the occurrence of *gehwelc* is in a *wh*-construction (a relative clause), but the relative pronoun is *ðara*, and *gehwelc* is a universal, the combination amounting to ‘each of which’ (the occurrence was labeled as a *wh*-pronoun but should have been labeled as quantifier according to YCOE guidelines). The second example (20) contains an embedded question, and in the YCOE parse *gehwa* is the interrogative *wh*-pronoun. YCOE is based on Clemoes’s (1997) edition of Ælfric’s Homilies I. In Thorpe’s (1844) edition, the word boundaries are identified differently, as indicated in (22):

- (22) ... deme ge hwa þæs wurðmyntes wyrþe sy  
*judge you who (of) the honour worthy be*

In MS Royal, the oldest surviving manuscript of this text (accessible by the British Library’s online Manuscript Viewer p148r (MS p. 144), line 3)), the word boundaries are not indicated. The MS would be equally compatible with both parses. According to the Thorpe parse, the sentence is an example of an imperative with an overt second person subject, a construction available in OE (see also Kruger 2012):

- (23) a. Gebige ge on beorge (B&T)  
*abide you on mount*  
 ‘Abide on the mount.’
- b. Ne ondræde ge (B&T)  
*not fear you*  
 ‘Do not fear.’

Since the Thorpe parse allows us to maintain the otherwise uncontested generalization that *gehwa* is not an interrogative pronoun, it should be preferred.

The Wülfing example (21), finally, contains a coordinate structure with a bare indeterminate phrase *hwylcum cyninga tidum* and a *ge*-indeterminate phrase *gehwylcum biscopum*. Wülfing must have assumed a coordination of two interrogative *wh*-phrases, as in the syntactic structure sketched in (24a). The YCOE parse does not analyse the example in this way; according to their structure, sketched in (24b), the example is a coordination of a quantifier phrase and an embedded question. Finally, the Miller translation invites a third syntactic analysis, sketched in (24c): according to this possibility, both indeterminate phrases are universal quantifiers and the bare indeterminate phrase is modified by a zero relative clause.

- (24) a. [IP very much [IP they [VP me said [PP about  
           [CP [GE.which bishops] and [which kings’ times]  
           [IP Saxons [VP the gift received of Christ’s faith]]]]]]]]  
 ‘Very much they told me about *at?* which bishops and which kings’  
 times the Saxons [...] received the gift of Christ’s faith.’
- b. [IP very much [IP they [VP me said  
           [PP about GE.which bishops] and  
           [CP which kings’ times [IP Saxons [VP the gift received of Christ’s  
           faith]]]]]]]]  
 ‘Very much they told me about all bishops and *at* which kings’ times  
 the Saxons [...] received the gift of Christ’s faith.’
- c. [IP very much [IP they [VP me said [PP about  
           [NP [GE.which bishops] and [which kings’ times]  
           [CP ∅ [IP Saxons [VP the gift received of Christ’s faith]]]]]]]]  
 ‘Very much they told me about all bishops and all dates of the kings *that*  
 the Saxons [...] received the grace of Christ’s faith.’

As for the Wülfing parse (24a), the status of the dative *gehwylcum biscopum* is not clear to me, in addition to violating the generalization that the *ge*-series is not interrogative. The YCOE parse (24b) needs to assume that the dative *hwylcum cyninga tidum* is an adverbial free dative. This option has been observed by van Kemenade (1987) and is attested, for example, by (25).

- (25) hwelcum tidum him gecopust sie to spreccane (CP 274.18)  
*what time him most profitable is to speak*  
 ‘at what time it is most profitable for him to speak’ (van Kemenade  
 1987, (27b) p. 82)

The Miller parse (24c) relies on the possibility of relative clauses without relative pronoun or complementiser, so-called zero relatives. This possibility is attested for OE in Fischer et al. (2000) and Suarez-Gomez (2008); it is in fact anticipated in Wülfing (§304 pp. 419-421). (9b) above provides an example as shown in (9b’). (Interestingly, (24c) adds another occurrence of a universal interpretation of a bare indeterminate phrase.)

- (9b’) ... sue hit soelest sie for ða hit begetan.  
 ... *so it best be for them it obtained*  
 [them [<sub>CP</sub> ∅ [<sub>IP</sub> t it obtained]]]  
 ‘... so it best be for those who obtained it.’

Given these considerations, the parse in (24a) is the least preferred one, and example (21) doesn’t amount to an interrogative interpretation of *gehwelc* either. Following common consensus, I conclude that the *ge*-series, in contrast to the bare series, cannot be used as an interrogative or FCR *wh*-expression.

**In sum**, the *ge*-series of indeterminate pronouns can be used as existential and universal quantifiers. They cannot be used as interrogative *wh*-pronouns in questions and FCR. *Ge*-indeterminate pronouns occur in NPI and FCI contexts.

### 2.3 The *a*-series and *ælc*

Finally, we turn to indeterminate pronouns of the *a*-series. Indeterminate pronouns like *æghwa*, *æghwelc*, *æghwær* are to be analysed etymologically as derived from the combination of a bare indeterminate pronoun (*hwa*, *hwelc*, *hwær*) with the prefixes *a* ‘always, ever’ and *ge* ‘and, also’. The indeterminate pronoun combines first with *ge* then with *a*- (see once more, for example, Einenkel (1904), Bosworth and Toller (1898/1921), and Kahlas-Tarkka (1987)): [A- [GE- indeterminate]]. I gloss them as ‘A-GE-who/what’, ‘A-GE-which’, and ‘A-GE-where’. I include the indeterminate pronoun *ælc* in the discussion in this subsection. The etymology of *ælc* is less clear. While Haspelmath (1995) analyses it as ‘a-hwelc’, Kahlas-Tarkka (1987) contemplates derivations from ‘all + body’ and from ‘ever alike’, without clear conclusion. We will see below that no matter its etymology, the interpretive options of *ælc* track those of the *a*-series. Thus Haspelmath’s analysis is at least semantically a better fit. I gloss *ælc* as ‘ÆLC’ but assume that it behaves as an indeterminate pronoun of the *a*-series in terms of the semantic and formal properties investigated in this paper.

The question is once more to what extent the interpretive options of the *a*-series match those of the other indeterminate pronouns. I sort the data by interpretation in this subsection as well, and I include *ælc* under a given interpretation with the other *a*-series indeterminate pronouns, but provide separate examples.

A universal interpretation is, uncontroversially, the prominent reading of the *a-ge*-series. The most common OE universal quantifier is *ælc* (Kahlas-Tarkka 1987), and conversely, the universal reading is the prominent interpretation of *ælc*, too. (26) and (27) provide examples of universal interpretations of *a-ge*-indeterminate pronouns and *ælc*.

(26) *universal*:

a. & heo hit haebben **eghwæs** to freon butun agefen  
*and she it have A.GE.what to free except giving*  
 elce gere ðreo mittan hwætes to ciricsceatte to Clife.  
*each year three measures (of) wheat to church-tax to Cleeve*  
 (codocu2,Ch\_1283\_[Rob\_16]:22.105)

‘and she shall hold it free **in every respect** except for rendering every year three *mittan* of wheat as church dues to Cleeve’ (Robertson 1956, 31)

b. Hio gehæt him **æghwæs** genog,  
*it promise him A.GE.what enough*  
 (cocura,CP:11.71.22.474)

‘It promises him enough of **everything**.’ (Sweet)

c. & suelc mon se ðet lond hebbe **eghwylc Sunnandege**  
*and such man that this land has each Sunday*  
 XX gesufra hlafa to ðare cirican for Ealdredes saule & for Ealhburge.  
*twenty ‘gesuff’ loaves to the church for Ealdred’s soul and for Ealhbürg’s*  
 (codocu1,Ch\_1195\_[HarmD\_5]:9.75)

‘And whoever has this land [is to give] twenty ‘gesuff’ loaves to the Church, **every Sunday**, for the souls of Ealdred and Ealhbürg.’ (Harmer V p. 44)

d. Æt ærestan we lærað, þæt mæst ðearf is, þæt  
*at earliest we teach, that most need is, that*  
**æghwælc** mon his að & his wed wærlice healde.  
*A.GE.which man his oath and his pledge carefully keep*  
 (colawaf,LawAf\_1:1.2)

‘First we teach what is most necessary: that **each man** hold his oath and his pledge carefully.’

Zuerst lehren wir, was zumeist nöthig ist, dass jedermann seinen Eid und sein rechtsförmliches Versprechen sorgfältig halte. (Liebermann p. 47)

(27) *universal*:

a. & ic bidde & bebeode swælc monn se ðæt min  
*and I ask and command such man that this my*  
 lond hebbe ðæt he **ælce gere** agefe ðem higum æt  
*land have that he each year give the community at*  
 Folcanstane L ambra maltes & [...] & VI scep.  
*Folkstone fifty ambers (of) malt and [...] and six sheep*  
 (codocu1,Ch\_1482\_[HarmD\_2]:30.34)

‘and whosoever may have this land of mine, I pray and command him to give **annually** to the community at Folkstone fifty ‘ambers’ of malt [...] and six sheep.’ (Harmer II p. 41) (‘... give **every year** to the community...’)

b. Gif mon oðres wudu bærneð oððe heaweð unaliefedne,  
*if man other’s wood burn or fell unlawfully*  
 forgielde **ælc great treow** mid V scillingum, & siððan  
*repay each great tree with 5 shillings, and afterwards*  
 æghwylc, sie swa fela swa hiora sie, mid V

*every, be so many so (of) them be, with 5  
 pæningum; & XXX scillinga to wite.  
 pence; and 30 shillings to punishment.*

(colawaf, LawAf\_1:12.62)

‘If a man burns or fells another’s woodland illegally, repay **each big tree** with 5 shillings, and then each one, as many as there were, with 5 pence; and 30 shillings fine.’

Wenn jemand das Gehölz eines anderen ohne Erlaubnis abbrennt oder abhaut, so vergelte er jeden grossen Baum mit 5 Schill., und weiterhin jeden, sei es so viele als ihrer seien, mit 5 Pfennigen; und 30 Schill. zur Strafe. (Liebermann p. 57)

- c. Forðæm hit bið swiðe geswincful ðæt mon **ælcne mon**  
*therefore it be very laborious that one ÆLC man*  
 scyle on sundrum læran,  
*should in separated teach*  
 (cocura, CP:60.453.10.3266)

‘For while it is very laborious to have to teach **each one** separately, (it is still more difficult to teach them all together)’ (Sweet)

Similar to the *ge*-series, question and FCR uses are generally unavailable for the *a*-series. A global search for *æghwa*, *æghwelc*, and *ælc* as *wh*-expressions in all YCOE files yielded only one hit, (28) below (among 2314 hits total for the three pronouns). This is at the same time Wülfing’s only prospective example of an interrogative use of *æghwelc*. The interrogative analysis of the example is reflected in the translation from the literature offered.

- (28) & hi witon eac on hwelcum wæterum & on  
*and they know also in which waters and in*  
**æghwelcra** ea muþum hi sculon secan fiscas  
*A.GE. which river mouths they should seek fish*  
 (coboeth, Bo:32.73.32.1370)

‘and they also know in what waters and at **what river-mouths** to look for fish.’ (Kiernan et al. 2002: Alfred the Great’s Boethius: An Electronic Edition; [www.uky.edu](http://www.uky.edu))

‘and they also know that they should seek fish in some waters and at **all rivers’ mouths**.’

I propose that an alternative analysis of this example is possible, which is reflected in my own translation. Two properties of OE go into this alternative understanding of (28): (i) the OE bare series is not necessarily interrogative, and (ii) OE allowed fronting of a constituent past the subject of an embedded clause. Property (i) is well known and illustrated in Sect. 2.1. Property (ii) is discussed in particular in Allen (1995), Heggelund (2007, 2010) and Speyer (2010). Illustrating examples are given in (29). The syntactic structure of (28) with this non-interrogative fronting is sketched in (30). In this

structure, the complement of *witan* ‘know’ has no overt complementiser ‘that’. This option is explicitly noted, for example, in Bosworth and Toller and illustrated in (31).

- (29) a. Ac God hine adræncte on þære deopan sæ,  
*but God them drowned in the deep sea*  
 [CP þæt [PP of ealre his fyrde] [NPS<sub>subj</sub> an mann] ne belaf]  
*that of all their army one man not remained*  
 (Judith 91, Heggelund 2007, (8))  
 ‘But God drowned them in the deep sea, so that not one man  
 remained of all their army.’  
 b. [CP þæt [NPO<sub>bj</sub> an luf] [NPS<sub>subj</sub> he] æteowde mid his deaðe  
*that one life he manifested with his death*  
 (Ælfric’s Homilies I 224.18 Koopman 2011, (1))  
 ‘that he manifested one life with his death’

- (30) (and they also know)  
 [CP [PP on hwelcum wæterum & on æghwelcra ea muþum] [NPS<sub>subj</sub> hi]  
 sculon secan fiscas]

- (31) Swa ic wat he minne hige cuðe  
*so I knew he my intention perceived*  
 ‘So I knew that he perceived my intention.’  
 (Graves Geoghegan 1975, (61) p. 42)

Thus (30) is possible in terms of OE grammar. The context in the Boethius text is one in which no particular waters or rivers are relevant. Rather, the example occurs in a list with further statements to the effect that men know to look for precious stones in the sand, and to hunt for game in the woods and hills. Allen (1995) includes list contexts among the environments which favour this kind of fronting. This means that (30) is pragmatically plausible as well. Parallel to the point made regarding the *ge*-series, I argue that this analysis is to be preferred over an analysis according to which (28) is the one counterexample to the generalization that *a*-series pronouns are not interrogative.

In contrast to the *ge*-series, existential readings are not attested for the *a*-series (see e.g. Kahlas-Tarkka, Bosworth and Toller), and my search has not found any such examples either. The remaining interpretations to be investigated for *a-ge*-indeterminate pronouns and *ælc*, therefore, are potential NPI and FCI interpretations.

(32) illustrates uses of *a-ge*-indeterminate pronouns in NPI contexts (e.g. *butan* ‘without’, *beorgan* ‘prevent’). Two issues need to be considered when we ask whether an NPI analysis of the *a*-series is called for. The first is the possibility of a plain existential reading instead of an NPI interpretation. Since the *a*-series does not have an existential interpretation in non-NPI-contexts, these examples cannot be analysed thus. The second issue is whether the examples in (32) could be analysed as wide scope universals instead of NPIs. This possibility is not immediately very intuitive: in examples like (32a) the translation ‘and ever, to time without every end’ is intuitively inappropriate. We can trace its oddness to the presuppositional nature

of the universal quantifier: *every* would presuppose that there be an end (or perhaps more than one end) (cf. (33a)), which is not appropriate in this context. Despite the equivalence in (33b), then, wide scope *every* is distinguishable from narrow scope *any* in the context of negation, at least in PDE. However, it is hard to be sure whether OE universal quantification gives rise to the same presupposition. I return to the issue of (33b) and a wide scope universal interpretation below.

(32) *NPI context:*

- a. And a. a. a. to worulde buton **æghwīlcum ende** Amen  
*and ever ever ever to world without A.GE.which end Amen*  
 ‘And ever, to time without end.’ (‘...without **any end**...’)

(K-T; Ælfred’s Boethius, Sedgefield 1899, 149 (final prayer))

Note: ‘time without every end’ — PSP: there is at least one end — not intended.

- b. & icen hie simle mid hira agenum, ðylæs hie sien to  
*& increase them always with their own lest they be to*  
 oðerra monna gefeohte holde haweras, & don him  
*other men’s struggle kind spectators and do them*  
 selfe nawuht, & ðonne eft æfter ðam gefeohte sie  
*selves nothing and then later after the struggle be*  
 butan **æghwēlcum** edleane on ðys andweardan life.  
*without A-GE-which reward in this present life*  
 (cocura,CP:34.229.15.1504)

‘(Let them take an example from their good works,) and always increase them with their own, lest they be sympathizing spectators of other men’s efforts without themselves helping them, and then, when the struggle is over, be without **any** reward in this present life.’ (Sweet)

- c. & him **æghwæt** sealtes beorge,  
*& him anything (of) salt guard*  
 (colaece,Lch\_II\_[1]:59.1.4.1744)

‘guard him against **anything** salty’

Note: B&T *beorgan*: ‘prevent (the happening of) accusative to dative’

*He him slæp beorge* ‘let him take care not to sleep’, Lch. ii. 270, I.

*Ic me his hete berh* ‘I guard myself against his hate’, Bd. 2, 12;

is taken to be an NPI licenser; it licenses negative concord:

*Beorge he þ he awoh ne befo* ‘let him guard against that he wrongly grasp’,

Ll. Th. i. 290, 7.

- d. Her sindon læcedomas wip **æghwæpperre** sidan sare & tacn  
*here are treatments against A.GE.wh.either sides pain & sign*  
 hu sio adl toward sie & hu þæt mon ongitan  
*how the illness come is & how that one recognize*  
 mæge & hu hiora mon tilian scyle.  
*may & how them one treat should*  
 (colaece,Lch\_II\_[2]:46.1.1.3017)



‘Here are treatments for pain of **either** side, and signs how the disease comes and how one may recognise it, and how one should treat them’ (Doyle 2017)

- (33) a.  $[[\text{every}]] = \lambda Q:\text{there is at least one } x \text{ such that } Q(x).\lambda P.\forall x[Q(x)\rightarrow P(x)]$   
 b.  $\exists x[P(x)] \Leftrightarrow \forall x[P(x)]$

The examples in (34) show parallel data for *ælc*. The word occurs in NPI licensing contexts (‘without’, ‘empty’, ‘deprive’), and here as well it is possible to identify examples (e.g. (34b)) in which a paraphrase with *every* is not appropriate.

(34) *NPI context:*

- a. (& þrie Scottas comon to Ælfrede cyninge,)   
*and three Irishmen came to Alfred king*  
 on anum bate butan **ælcum** gereþrum (of Hibernia,)   
*in a boat without ÆLC oars*

‘And three Irishmen came to King Alfred in a boat without **any** oars’ (B&T; Chr.891; P.82,19; Two of the Saxon Chronicles, ed. Charles Plummer; Translation: Kahlas-Tarkka, L. 1993: Towards the modern English dichotomy between *every* and *each*. In Matti Rissanen, Merja Kitö and Minna Palander- Collin: Early English in the Computer age. Mouton de Gruyter, Berlin, 201–218)

- b. Se ilca se monegum yfelum wið hine selfne   
*the same that many evils against him self*  
 forworhtum ær gearode, he wearð eft sua ungemetlice   
*sinned earlier spared he became then so immoderately*  
 grædig ðæs godan deapes, butan **ælcra scylde & ælcra**   
*greedy (of) the good deathdeath without ÆLC crime & ÆLC*  
**wiðerweardnesse** wið hine.   
*hostility against him*  
 (cocura,CP:3.35.24.182)

‘The same one who formerly spared him who had sinned against him with so many evils, became immoderately eager for the death of the virtuous Uriah, without **any crime or offence** against himself.’ (Sweet)

Note: ‘without every crime’—PSP: there was at least one crime—not intended.

- c. **Ælces eles** æmtig,   
*(of) ÆLC oil empty*

‘empty of **any oil**’

(B&T Gr. D. 160, 9 Gr. (Greg.) Dial. The Anglo-Saxon version of Gregory’s Dialogues. Quoted from Lye. v. Wanley’s Catalogue, p. 71)

- d. Ðæt is ðonne se foreda foot & sio forude hond ðæt mon  
*that is then the broken foot & the broken hand that one*  
 wite Godes biboda weg, & ðær nylle on gan, ac sie bedæled  
*know God's ordered path & there not.want on go but is deprived*  
 & aidlad **ælces godes weorces**, nals na sua sua healt  
*& frustrated (of) ÆLC good work not neg so as lame*  
 monn oððe untrum, hwilum hie gað, hwilum hie  
*man or ill sometimes he goes sometimes he*  
 restað, ac se foreda fot a bið ælces **feðes** bedæled.  
*rests but the broken foot always is (of) ÆLC motion deprived*  
 (cocura,CP:11.67.8.430)

‘The broken hand and foot is when a man knows the path of God’s commands and will not follow it, but is deprived of **every good work** and frustrated, not at all like a lame or diseased man, who is sometimes in motion, sometimes at rest, while the broken foot is always entirely deprived of **motion**.’ (Sweet) (‘... deprived of **any good work**... entirely deprived of **any motion**.’)

Example (35) is an illustration of NPI and universal interpretations of *ælc* simultaneously. We are particularly interested in the second, the putative NPI occurrence of *ælc*. Let’s consider the simplified version (35’) in detail. In (35’) I have removed the first universal *ælc*, and then paraphrased the NPI licensing element ‘wipe off’. The example allows us to distinguish a narrow scope existential NPI analysis from a wide scope universal analysis because another scope bearing element occurs between the potential NPI and its licenser, namely *wenan* ‘supposition’. I take this word to have (roughly) the same semantics as *believe*. Semantic analyses of an existential NPI analysis and a wide scope universal analysis are given in (35’’a) and (35’’b) respectively. The more plausible paraphrase for (35) clearly follows (35’’a). In the case of the *a*-series, we therefore take these indeterminate pronouns have an analysis as NPIs.

- (35) Forðæm hit is betere, [...], ðætte **ælc mon** adryge of  
*therefore it is better [...], that ÆLC man wipe off of*  
 oðerra monna mode ðone wenan be him **ælces yfeles**,  
*other men's minds the supposition near him (of) ÆLC evil*,  
 (cocura,CP:59.451.22.3254)

‘Therefore it is better, [...], for **every man** to wipe away from the minds of others the **unfavourable opinion** of himself.’ (Sweet) (‘...the supposition of **any evil** in him...’)

- (35’) Voldemort wiped off their minds the supposition of *ælc* evil in him.  
 = V brought it about that it is not the case that they suppose that *ælc* evil is in V.

- (35’’) a.  $\neg\forall w[w \in \text{BEL}(@)(\text{they}) \rightarrow \exists x[\text{evil}(w)(x) \ \& \ \text{in}(w)(x)(V)]]$   
 ‘It is not the case that there is a belief of any evil in V.’  
 b.  $\forall x[\text{evil}(@)(x) \rightarrow \neg\forall w[w \in \text{BEL}(@)(\text{they}) \rightarrow \text{in}(w)(x)(V)]]$   
 ‘Each actual evil is such that they don’t suspect V of it.’  
 (where @ is the actual world)

Finally, let's ask whether the *a*-series can occur in FCI contexts. This is certainly the case, for example in (26d) and (27b). I add the following examples which invite an interpretation as FCI (in (36a) and (37a) a generic context would license an FCI and in (36b) and (37b) a possibility modal, so in all four examples a translation as FCI 'any (one)' would be possible):

(36) *FCI context:*

a. & **æghwelces** **lareowes** lar      wihxð ðurh      his geðylde,  
& *A.GE.which teacher's learning grows through his patience*  
(cocura,CP:33.215.23.1441)

'and the learning of **every teacher** grows through his patience,' (Sweet)

b. Ac swa swa we nu ðis reah-ton be eallum  
*but so as we now this told for all*  
monnum, swa hit mæg **æghwelc** **mon** be  
*men so it may A.GE.which man for*  
him anum geðencean, forðæm ðe **æghwelc** **mon** ðe  
*him alone conceive because that A.GE.which man that*  
his bebod & his forbod ongiet, he bið swelce he  
*his commands & his forbids understands he is such he*  
beforan him stonde, ærðæm ðe he gesyngige.  
*before him stands before that he sins*  
(cocura,CP:52.407.1.2793)

'But as we have now said this of all men, so **each man** can apply it to himself individually, because **every man** who understands what he commands and forbids, stands, as it were, before him, before his sins.' (Sweet)

(37) *FCI context:*

a. Bi ðæm suiðe wel se forma hierde ðære halgan ciricean,  
*by that very well the first shepherd (of) the holy church*  
ðæt is Sanctus Petrus, manode oðre hierdas,  
*that is Saint Peter admonished other shepherds*  
ða he cuæð: Bioð simle gearwe to læranne & to  
*when he said be always prepared to teach & to*  
forgiefanne **ælcum** **ðara ðe** iow ryhtlice bidde ymbe  
*grant ÆLC (of) those that you rightly ask about*

ðone tohopan ðe ge habbað on eow.  
*the hope that you have in you*  
(cocura,CP:22.173.6.1172)

'About which the first sheperd of the holy Church, that is St. Peter, admonished other shepherds very well, saying: "Be ever ready to teach, and grant his request to **every one who** asks you rightly about the hope ye have in you."' (Sweet)

b. **Ælc mon** mot onsacan frympe & werfæhðe, gif he  
*ÆLC man may deny entertainment & slaying if he*  
mæg oððe dear.  
*may or dare*

(colawine,LawIne:46.2.127)

'**Any man** may deny entertainment and slaying, if he is able to or dares.'

Jedermann darf sich frei schwören von [Diebstahls-]Beherberung und Menschen-Tödtung, wenn er kann oder wagt. (Liebermann p. 111)

At the same time, uses like (26c), (27a) as ‘every Sunday’, ‘every year’ do not invite an interpretation as FCI, and (27c) with the adverbial ‘separately’ seems incompatible with it: The intended reading of (27c) is one in which the events described (teaching) are distributed over the individual members of the group described by *aelc*. This reading does not arise when a known FCI like *any* is placed in its position in the sentence (cf. (38)). Thus there are non-FCI universal uses of *a*-series indeterminate pronouns. For the moment, therefore, I note merely that the data are compatible with an FCI analysis, and postpone a detailed discussion to Sect. 3.5.

(38) # It is laborious to teach any one separately.

**In sum:** *a-ge*-indeterminate pronouns and *aelc* can be used as universal quantifiers and as NPIs. They cannot be used as interrogative pronouns in questions and FCR or as existentials. They occur in FCI contexts.

## 2.4 Section summary

The table below summarizes the results of the empirical overview given in this section for the three series of indeterminate pronouns in OE. My own OE1 and OE2 data gathered by searching the YCOE corpus match the examples and generalizations in the available descriptive literature. A ‘√’ in (39) indicates that an interpretation is attested, a blank that it isn’t.

(39)	question	FCR	FCI	NPI	Univ	Exist
bare series	√	√	√ <sup>?</sup>	√ <sup>?</sup>	√	√
<i>ge</i> -series			√ <sup>?</sup>	√ <sup>?</sup>	√	√
<i>a</i> -series			√ <sup>?</sup>	√	√	

The notation “√<sup>?</sup>” for FCI and NPI uses in (39) indicates that the data are compatible with this interpretation but observation is not sufficient to prove it. To give the reader a preview of my final stance on these interpretations, I provide the table in (39′) with the five question marks resolved. The theoretical discussion in Sect. 3 will lead us to the interpretation of the ‘raw’ data (39) that (39′) summarises. That is, I will argue that OE indeterminate pronouns do have an analysis as FCI, and that the *ge*-series but not the bare series has an analysis as NPI. I also assume that the unattested uses are in fact unavailable.

(39′)	question	FCR	FCI	NPI	Univ	Exist
bare series	√	√	√		√	√
<i>ge</i> -series			√	√	√	√
<i>a</i> -series			√	√	√	

The pattern in (39′) corresponds to the grammatical options of OE indeterminate pronouns that the analysis in Sect. 3 captures.

### 3 Semantic analysis

In this section, I develop a compositional semantic analysis of the data from Sect. 2. The analysis answers the questions raised at the beginning of the paper: What is the semantic contribution of the indeterminate pronoun? How does the sentence come to express a universal or existential statement or a question? What determines the range of possible sentence interpretations for a given indeterminate pronoun?

Here is a preview of the answers that I will give: Indeterminate pronouns will be analysed as alternative triggers, in keeping with earlier analyses (e.g., Hamblin 1973; Shimoyama 2001; Kratzer and Shimoyama 2002). This is motivated by the types of sentence interpretations they participate in (e.g., questions and polarity items). The pronoun is linked to sentence interpretation indirectly because each series of indeterminate pronouns participates in different types of sentence interpretation. This motivates an analysis in which covert operators associate with the pronoun and those operators (e.g., the question operator or existential and universal quantifiers) fix the sentence meaning. Nonetheless, the indeterminate pronouns come with restrictions as to possible types of use. I will identify lexical properties of the three series (semantic or at the syntax/semantics interface) which constrain which operators a pronoun can associate with, thus restricting the sentence meanings it can participate in.

In Sect. 3.1, I present the semantic background with which I approach the issue. I introduce an alternative semantics for indeterminate pronouns and embed it in a theory of compositional interpretation with an alternative semantic tier. In Sect. 3.2, I extend and apply this semantics to the bare series of OE indeterminate pronouns and their possible interpretations. Sections 3.3 and 3.4 develop analyses of the *ge*- and the *a*-series, respectively. Section 3.5 is dedicated to FCIs in OE, and Sect. 3.6 summarises.

#### 3.1 Background: alternatives and operators

At the core of the constructions discussed above is the bare indeterminate pronoun with an interrogative use. This is my analytical starting point, and hence I begin with an analysis of the semantics of questions. Here, I follow the tradition started by Hamblin (1973), who first proposed an alternative semantics of questions.

The basic idea of a Hamblin semantics for questions is that the denotation of a question is the set of its possible propositional answers. For example, the question in (40a) could, in a given context, have answers like (40b), or in more general terms, (40c). That is, the meaning of a question is a set of propositions. (40d) provides a more formal representation of (40c); the semantic type of a proposition is  $\langle s,t \rangle$ , so this is a set of  $\langle s,t \rangle$  alternatives. The semantic contribution of the question is to raise the alternatives, and its pragmatic contribution is mostly a request to state which of these alternatives are true (e.g., Krifka 2011 for recent discussion). (In the semantic discussion, I print linguistic material of the object language in italics, while the metalanguage is in regular print.)

- (40) a. *Who left?*  
 b. {that Ælfred left, that Bede left, that Cædmon left,...}  
 c. {that x left |  $x \in D$ }  
 d.  $\{\lambda w.x \text{ left}_w \mid x \in D\}$

The interrogative pronoun is responsible for introducing alternatives into the composition; we can take it informally to make the contribution in (41a). These alternatives combine with the syntactic environment of the interrogative pronoun to yield the required set of propositions (41b) (see below for formal details).

- (41) a. *who*:  $\{\text{Ælfred, Bede, Cædmon, ...}\}$   
 b. *who left*:  $\{p: \text{there is an } x \in \{\text{Ælfred, Bede, Cædmon, ...}\} \text{ such that } p = \text{that } x \text{ left}\} =$   
 $\{\text{that Ælfred left, that Bede left, that Cædmon left, ...}\}$

When we integrate this question semantics into a theory of compositional interpretation for natural language, matters are complicated by the fact that we need to consider simultaneously two tiers of meaning: ordinary semantic values  $[[\cdot]]_o$  and alternative semantic values  $[[\cdot]]_{Alt}$ . This is shown particularly clearly by focus (Rooth 1985, 1992). The example in (42a), with focus on the subject DP, introduces alternatives (42b). At the same time, the sentence expresses the proposition in (42c).

- (42) a. *Ælfred<sub>F</sub> left.*  
 b.  $\{\lambda w.\text{Ælfred left}_w, \lambda w.\text{Bede left}_w, \lambda w.\text{Cædmon left}_w, \dots\}$   
 c.  $\lambda w.\text{Ælfred left}_w$

This means that the subject DP, with its focus feature, serves two semantic functions. Its ordinary semantics is reference to an individual (43a). There is a second tier of meaning (43b), the alternatives triggered by this constituent.

- (43) a.  $[[\text{Ælfred}_F]]_o = \text{Ælfred}$   
 b.  $[[\text{Ælfred}_F]]_{Alt} = \{\text{Ælfred, Bede, Cædmon, ...}\}$

Semantic composition has to be defined for both tiers of meaning. For the ordinary semantics, function application (45a) yields the proposition expressed in the familiar way, (44a). For the alternative semantic value, pointwise function application (45b) applies, resulting in the set of alternative propositions (44b) (see Rooth 1985, or for a recent version Beck 2016).

- (44) a.  $[[\text{Ælfred}_F \text{ left}]]_o = [[\text{left}]]_o([[ \text{Ælfred}_F ]])_o$   
 $= \lambda w. \text{Ælfred left}_w$   
 b.  $[[\text{Ælfred}_F \text{ left}]]_{Alt} = \{[[\text{left}]]_o(\text{Ælfred}), [[\text{left}]]_o(\text{Bede}), [[\text{left}]]_o(\text{Cædmon}), \dots\}$   
 $= \{\lambda w. \text{Ælfred left}_w, \lambda w. \text{Bede left}_w, \lambda w. \text{Cædmon left}_w, \dots\}$

- (45) a. Function Application FA:  
 If  $[[\beta]]$  is a function whose domain includes  $[[\gamma]]$  then  $[[\beta]] \oplus [[\gamma]] = [[\beta]] ([[ \gamma ]])$ .

- b. Pointwise Function Application PFA:  
 If  $[[\beta]]$  is a set of functions  $\beta'$  and  $[[\gamma]]$  is a set containing elements of the domain of  $\beta'$ , then  $[[\beta]] \oplus [[\gamma]] = \{\beta'(\gamma') : \beta' \in [[\beta]] \text{ and } \gamma' \in [[\gamma]]\}$   
 ( $X \oplus Y$  stands for the composition of two semantic values X and Y)

The same two tiers of meaning need to be taken into account in a more detailed analysis of questions as well. Below I implement this in terms of Beck (2006, 2016) (see also Kotek 2014, 2019).<sup>4,5</sup> The sole semantic role of the interrogative pronoun is to introduce alternatives. Accordingly, we define the lexical entry in (46): the *wh*-word introduces alternatives at the level of alternative semantic values (46b), while its ordinary semantic value is undefined (46a). As before, both semantic values enter into further composition, (47).

- (46) a.  $[[who]]_o$  is undefined.  
 b.  $[[who]]_{Alt} = \{x \mid x \in D\}$   
      $= \{\text{Ælfred, Bede, Cædmon, ...}\}$
- (47) a.  $[[who \text{ left}]]_o$  is undefined.  
 b.  $[[who \text{ left}]]_{Alt} = \{\lambda w.x \text{ left}_w \mid x \in D\}$   
      $= \{\text{that Ælfred left, that Bede left, that Cædmon left, ...}\}$

(47) is not the final result. According to the Hamblin question semantics, the ordinary meaning of the question is the set of alternatives. Thus, a further operation has to rescue the structure from an undefined ordinary semantic value, by raising the alternatives to the level of ordinary meaning. This is the contribution of the question operator Q, defined in (48a) (in simple terms; for more refined versions see the literature cited). Applied to the example, we obtain the desired outcome (48b).

- (48) a.  $[[Q \text{ XP}]]_o = [[XP]]_{Alt}$   
 b.  $[[Q [who \text{ left}]]]_o = \{\lambda w.x \text{ left}_w \mid x \in D\}$   
      $= \{\text{that Ælfred left, that Bede left, that Cædmon left, ...}\}$   
 c.  $[Q \text{ [... indeterminate pronoun...]}]$   
     └──────────────────┘

The resulting theoretical picture is this: natural language has expressions that trigger the introduction of alternatives into the semantic calculation. Among those

<sup>4</sup> Or rather, a simplified version of Beck (2006, 2016). Both papers consider the interaction of several operators that evaluate alternatives. Since this is not a topic in this paper, I do not need a system with distinguished variables and selective such operators, and can use a simpler version with Roothian alternative sets.

<sup>5</sup> In the following, I simplify regarding the restrictor on the alternative trigger. In the case of *which*-phrases, for example, the alternative set must be restricted to entities that meet the NP description that is the sister of *which*. In the case of *who*, the domain of alternatives must be restricted to people (or animate entities). The mechanisms outlined in Beck (2006) for *which*-phrases would work. See Slade (2011) and Beck and Reis (2018) for recent discussion; also for discussion of focus on *wh*-pronouns.

expressions are indeterminate pronouns. In the composition, this necessitates calculation of an alternative semantic value in addition to the ordinary semantic value. In their use as interrogative pronouns, the alternatives that indeterminate pronouns trigger are evaluated at sentence level by the interrogative operator Q. The association of Q and indeterminate pronoun is depicted informally in (48c). The Q operator raises the alternatives to the level of the ordinary semantic value. The result is a question meaning in the sense of Hamblin (1973).

The general properties of this theoretical picture are motivated by more than just questions. We have seen above that focus introduces alternatives as well. Alternatives are also the semantic tool used in the analysis of Free Choice Relative Clauses (FCRs) (e.g., Hirsch 2016), Negative Polarity Items (NPIs) (e.g., Krifka 1995; Lahiri 1998; Chierchia 2006) and Free Choice Items (FCIs) (e.g., Menéndez-Benito 2010; Chierchia 2013). They have been used in the analysis of universal and existential constructions with indeterminate pronouns in Japanese (Shimoyama 2001, 2006; Yatsushiro 2009; Uegaki 2018) and of indefinites in German (Kratzer and Shimoyama 2002). In each case, the alternatives triggered by the item in question (NPI, FCI, or indeterminate pronoun) are passed on compositionally until they encounter an evaluating operator (e.g., the operator EXH in the case of NPIs or a covert existential quantifier in the case of an indefinite interpretation—see below; the evaluating operator for focus is Rooth's (1992) famous  $\sim$  operator). At this point, the alternatives become operative in the ordinary semantics.

Looking back at the data set from OE, the set of interpretations under consideration (interrogative, FCR, FCI, NPI, universal, existential) invites an analysis in terms of an alternative semantics. The next subsection applies the basic theory introduced here to the OE bare series, and extends it to their non-interrogative uses.

### 3.2 OE bare indeterminate pronouns

In this subsection, the alternative semantics from Sect. 3.1 is applied to OE bare indeterminate pronouns. The core idea to be elaborated below is that the contribution of the indeterminate pronoun is the same throughout the possible sentence interpretations: it is an alternative trigger. The various sentence meanings—repeated in (49) from Sect. 2—come about by way of different operators that evaluate the alternatives triggered by the indeterminate pronoun. (50) indicates this association of operator and indeterminate pronoun. In (48) above, we have seen Q as one example of such an evaluating operator. Q derives the interrogative interpretation. Other operators will derive the other readings in (49).

(49)		question	FCR	FCI	NPI	Univ	Exist
	bare series	√	√	√ <sup>?</sup>	√ <sup>?</sup>	√	√

(50) [OP [... indeterminate pronoun...]]  
└──────────────────┘



### 3.2.1 Interrogatives

I propose to apply the analysis of questions from the preceding subsection directly to questions in OE. We have seen examples of OE *wh*-questions, for example in (3a), (7a), (9a), and (10a); another is given in (51a). For ease of exposition, I discuss an artificial sample structure (51b) in the semantic analysis.

- (51) a. Ic wat ge **hwæt** þu eart ge for **hwon** þu gnornast.  
*I know and what you are and for whom you grieve*  
 ‘I know both **what** you are and for **whom** you grieve.’  
 (B&T; Bd. 2, 12; Sch. 156, 14. König Alfreds Übersetzung von Bedas Kirchen-geschichte, ed. Jacob Schipper (Grein’s A.S. Prose Library))
- b. Hwa left?  
 ‘Who left?’

The analysis from above is applied to the example in (51’). (51’a) is the structure we interpret. The lexical semantics of the OE indeterminate pronoun is defined in (51’b) and is the same as PDE *who*. The question meaning is calculated with the help of the familiar Q operator, (51’c). This yields the desired question meaning, (51’d). Thus Q is an appropriate evaluating operator for OE bare indeterminate pronouns.

- (51’) a. [Q [XP *hwa left*]]  
 b. [[*hwa*]]<sub>o</sub> is undefined  
     [[*hwa*]]<sub>Alt</sub> = {x: x∈D}  
 c. [[Q XP]]<sub>o</sub> = [[XP]]<sub>Alt</sub>  
 d. [[Q [*hwa left*]]]<sub>o</sub> = {λw.x left<sub>w</sub> | x∈D}

The analysis can straightforwardly be extended to FCRs if we follow Hirsch (2016). (52a) is an OE example (see also (7b), (9b), (10b)); once more I use the simplified prototype structure in (52b) in the semantic discussion. According to Hirsch’s analysis, FCRs universally quantify over propositions, (53). The set of propositions quantified over is the meaning of the free choice relative clause, which contributes a question meaning. Thus the indeterminate pronoun has the same alternative semantics, and is evaluated in the same way as in the question above, (54), (55).

- (52) a. On ðæm medwisan is to trymmanne **swa hwæt sua**  
*in the simple is to strengthen so what so*  
 he ongietan mægen ðæs godcundan wisdomes, forðon,  
*they understand may (of) the divine wisdom because*  
 ðonne he nane wuht ne ofermodgiað, ðonne beoð ða heortan  
*when they neg.one being not haughty\_are then are the hearts*  
 suide gearwe wisdomes to anfonne.  
*very ready wisdom to receive*  
 (cocura,CP:30.203.10.1363)  
 ‘In the simple is to be strengthened **whatever** they can understand of the divine wisdom, because, while they are not at all presumptuous, their hearts are in a very fit state to receive wisdom.’ (Sweet)
- b. I will read *hwæt* he recommends.  
 ‘I will read whatever he recommends.’

- (53) For all  $p$ ,  $p \in [[hwæt\ he\ recommends]]_o$ :  
if  $p$  is true, then I will read the thing that he recommends.
- (54) a.  $[[hwæt]]_{Alt} = \{\text{Ælfric's Homilies, Beowulf, Anglo-Saxon Chronicle}\} = \{A, B, C\}$   
 b.  $[[hwæt\ he\ recommends]]_{Alt} =$   
 {that he recommends A, that he recommends B, that he recommends C}  
 c. If he recommends A, I will read A. If he recommends B, I will read B.  
 If he recommends C, I will read C.
- (55)  $[[Q\ [hwæt\ he\ recommends]]]_o = \{\lambda w. he\ recommends_w\ x \mid x \in D\}$

I will not go into greater detail concerning the analysis of FCRs here; see Hirsch (2016) for their conditional interpretation and other properties. For our purposes, it is sufficient to note that the analysis of questions can be extended to FCRs. Thus their internal structure and analysis is identical to that of interrogatives. The evaluating operator for the indeterminate pronoun they contain is also  $Q$ .

### 3.2.2 Universal and existential quantification

Next, we turn to the two other interpretations of OE bare indeterminate pronouns that the data unequivocally support: universal and existential readings. It is natural to suppose that the semantic contribution of the indeterminate pronoun is the same across the various sentence interpretations. Hence, the analysis of the universal and existential interpretations is also an alternative semantics. Its most direct theoretical predecessor is Kratzer and Shimoyama (2002) (also Shimoyama 2001, 2006 for Japanese universal and existential quantification with *-mo* and *-ka*).

Beginning with universal readings, we have seen examples (4b), (7d), (9d), and (10d) in Sect. 2. I provide another example in (56a). For ease of exposition, I once more use an artificial structure (56b) in the semantic calculation.

- (56) a. To manigenne sint ða gesomhiwan, ðeah hira **hwæðrum**  
*to admonish are the married though of them wh.either*  
 hwæthwugu hwilum mislicige on oðrum, ðæt  
*something sometimes displeases in other, that*  
 hie ðæt geðyldlice forberen;  
*they that patiently tolerate*  
 (cocura,CP:51.395.31.2688)  
 ‘The married are to be admonished, although they be sometimes displeased at something in one another, to tolerate it patiently;’ (Sweet)  
 ‘... although **each of them** sometimes dislikes something in the other...’
- b. Hwa left.  
 ‘Everyone left.’

Following Kratzer and Shimoyama (2002), a covert universal propositional quantifier (58) is part of the structure in which the indeterminate pronoun occurs on the universal reading, (57a). The sister of this operator is interpreted in the same way as before, (57b). Combining this with the operator yields the interpretation in (57c), accounting for the intuitive truth conditions (cf. (59)).

- (57) a. [ALL [XP *hwa left*]]  
 ‘Everyone left.’  
 b.  $[[hwa\ left]]_{Alt} = \{\lambda w.x\ left_w \mid x \in D\}$   
 c.  $[[ALL\ [hwa\ left]]]_o(w) = 1$  iff for all  $p \in \{\lambda w.x\ left_w \mid x \in D\}$ :  $p(w) = 1$
- (58)  $[[ALL\ XP]]_o(w) = 1$  iff for all  $p \in [[XP]]_{Alt}$ :  $p(w) = 1$
- (59) a.  $\forall p[p \in \{\text{that } x\ left \mid x \in D\} \rightarrow p \text{ is true}]$   
 b.  $\forall x[x \in D \rightarrow x\ left]$

The derivation of the existential interpretation (60) is entirely parallel and sketched in (61)–(62).

- (60) a. Gif *hwa* *oðerne* *godborges* *oncunne* & *tion* *wille,*  
*if one another another (of) God's pledge accuse and charge want,*  
*þæt he hwelcne ne gelæste ðara ðe he him gesealde,*  
*that he which not fulfill (of) them that he him granted,*  
*agife þone foreað on feower ciricum,*  
*give then fore-oath in four churches*  
 (colawaf, LawAf\_1:33.104)  
 ‘If someone accuses another of God’s pledge and wants to charge him, that he didn’t fulfill **some** of that which he had granted, then he gives fore-oath in four churches.’  
 Wenn jemand einen anderen anklagt wegen eines bei Gott verbürgten [Versprechens] und bezichtigen will, dass derselbe deren eines nicht erfüllt habe, die jener [Beklagte] ihm gegeben hätte, so leiste er den [Kläger-] Voreid in vier Kirchen; (Liebermann p. 67)
- b. *Hwa left.*  
 ‘Someone left.’
- (61) a. [EXIST [XP *hwa left*]]  
 ‘someone left.’  
 b.  $[[EXIST\ [hwa\ left]]]_o(w) = 1$  iff there is a  $p \in \{\lambda w.x\ left_w \mid x \in D\}$ :  $p(w) = 1$
- (62)  $[[EXIST\ XP]]_o(w) = 1$  iff there is a  $p \in [[XP]]_{Alt}$ :  $p(w) = 1$

Appropriate evaluating operators for the bare series hence also include the covert propositional quantifiers ALL and EXIST defined in (58) and (62).

### 3.2.3 Polarity items

To complete the picture, we turn to the analysis of possible uses of OE indeterminate pronouns as polarity items.

We begin with FCI. Remember the difficulty that we face here: It is hard to establish that OE indeterminate pronouns have an analysis as FCIs because they have an analysis as universals. This is clear because they are acceptable and have a universal interpretation in contexts in which FCIs are not licensed (e.g., episodic sentences without a modal). This universal analysis could simply apply in FCI contexts as well. To illustrate, an example corresponding to the abstract structure in (63a) does not absolutely require us to assume an FCI analysis of *hwelc* ‘which’

akin to (63b (i)), because an analysis in terms of (63b (ii)) as a universal quantifier could apply. Both would yield truth conditions amounting to (63c). Hence, the clearest criterion for identifying an item as an FCI—its licensing conditions—does not give a clear result here.

- (63) a. You can pick hwelc of these three cards.  
 b. (i) You can pick any of these three cards.  
 (ii) You can pick each of these three cards.  
 c.  $\forall x[x \text{ is one of these three cards} \rightarrow \text{you can pick } x]$

There is another intuition that may help to identify an FCI: the intuition of an exceptionally wide domain (Kadmon and Landman 1993), or that the universal quantification is over possible rather than actual entities of the description in the FCI (Dayal 1998; Alonso-Ovalle and Menéndez-Benito (forthcoming)) (my thanks to Paula Menéndez-Benito for drawing my attention to the importance of this intuition in the present context). (64) illustrates: (64a) intuitively entails (64b), hence seems to make a claim about possible rather than actual diplomats. Thus there seems to be an intensional component involved in FCI quantification. For the sake of concreteness, I represent this as a kind of generic quantification over possible individuals, as the paraphrase (64e) suggests. As far as I can tell, the intensional aspect of the semantics of FCIs is not an issue that semantic theory has resolved. It is my hope that whatever proves to be the right analysis of the phenomenon can be slotted into the sketch in (64c, d, e).

- (64) a. Mata Hari can seduce any diplomat.  
 b. If you were a diplomat, then Mata Hari could seduce you.  
 c.  $\forall p[p \in \{\text{that Mata Hari can seduce } x \mid \exists w[R(w)(@) \ \& \ \text{diplomat}_w(x)\}] \rightarrow \forall w[R(w)(@) \rightarrow p(w)]]$   
 d.  $R(w)(@)$  iff  $w$  follows the rules of  $@$  (where  $@$  is the actual world).  
 e. All propositions ‘Mata Hari can seduce  $x$ ’ (where  $x$  could be a diplomat), are, if things proceed normally, true.

How can we access this kind of intuition for OE? Here is how I will proceed: in this section, I will assume that OE bare indeterminate pronouns do have a use as FCIs, and present (the sketch of) an FCI compositional semantics. Since I do not present a knock-down argument, my assumption that there is an FCI analysis may be wrong. In that case, the FCI analysis suggested below simply doesn’t apply. The uses in question then ought to be analysed instead as plain universal quantifiers, as discussed in the preceding subsection. But I present evidence that is strongly suggestive of an FCI analysis, based on (64), in Sect. 3.5. Since this evidence concerns all three series of OE indeterminate pronouns equally, the discussion is moved to its own section.

Concretely, I propose that the analysis of FCIs in Menéndez-Benito (2010) applies to OE indeterminate pronouns. As before, instead of an actual example of a (plausible) FCI use like (8a), (11a), or (65a, b), I use the simplified artificial example (65c) in the semantic calculation.



- (68) a. I didn't eat hwelc cookie.  
 b. (i) I didn't eat any cookie.  
      (ii) I didn't eat a cookie.  
 c.  $\neg\exists x[\text{cookie}(x) \ \& \ \text{I ate } x]$

I proceed as follows: I discuss a version of the standard semantic analysis of NPIs. It will become clear that the analysis of OE bare indeterminate pronouns from above cannot be reconciled with such a standard analysis. I suggest, therefore, that the bare series of OE indeterminate pronouns does not have an analysis as NPIs. The relevant occurrences are instead plain narrow scope indefinites (i.e., they are to be analysed like (68b (ii)) rather than (68b (i))). The semantic discussion will be useful, however, when we turn to the OE *ge*-series in Sect. 3.3 because I argue that the *ge*-series differs in an interesting way semantically from the bare series, and does have an analysis as NPIs.

Here is the by now classical analysis of NPIs: NPIs are assumed to have an alternative semantics (Krifka 1995; Lahiri 1998; Chierchia 2006). In ways that vary slightly between analyses, the alternatives are different from Hamblin alternatives; ultimately, they are alternative properties. Moreover—and this is the case for all the various versions of the analysis—the NPI analyses require an ordinary semantic value. I illustrate in (69)–(71). The structure of the acceptable example (69) is (70a). The NPI is an existential quantifier which introduces alternative properties, (70b). Both of its semantic values are combined with their sentence context in the composition (70c), in the familiar way. The evaluating operator EXH is defined in (71). It excludes all alternatives that are more informative than the ordinary semantics. In the case of the acceptable (69), this runs empty and we end up with a negated existential statement (70d).

(69) I didn't see anyone

- (70) a.  $[\text{EXH} [\text{NOT} [\text{XP} \text{ I saw anyone}]]]$   
 b. NPI-Alts:  $[[\text{anyone}]_o = \lambda Q.\lambda w.\exists x[\text{P}(x) \ \& \ \text{Q}(x)]$   
                $[[\text{anyone}]_{\text{Alt}} = \{\lambda Q.\lambda w.\exists x[\text{P}'(x) \ \& \ \text{Q}(x)] \mid \text{P}' \subset \text{P}\}$   
 c.  $[[\text{XP}]_o = \lambda w.\exists x[\text{P}(x) \ \& \ \text{I saw}_w x]$   
        $[[\text{XP}]_{\text{Alt}} = \{\lambda w.\exists x[\text{P}'(x) \ \& \ \text{I saw}_w x], \lambda w.\exists x[\text{P}''(x) \ \& \ \text{I saw}_w x], \dots\}$   
 d. It is not the case that  $\exists x[\text{P}(x) \ \& \ \text{I saw } x]$ , and  
    (for all  $q, q = \lambda w.\neg\exists x[\text{P}'(x) \ \& \ \text{I saw}_w x]$ , for some  $\text{P}' \subset \text{P}$ :  
       if  $[\lambda w.\neg\exists x[\text{P}(x) \ \& \ \text{I saw } x]] \neq q$ , then  $q(w) = 0$   
       iff It is not the case that  $\exists x[\text{P}(x) \ \& \ \text{I saw } x]$ .)

- (71)  $[[\text{EXH ZP}]_o(w) = 1 \text{ iff } [[\text{ZP}]_o(w) = 1 \text{ and}$   
       for all  $q \in [[\text{ZP}]_{\text{Alt}}: ([[\text{ZP}]_o \neq q] \rightarrow q(w) = 0$

The complication introduced by the EXH operator finds its justification in accounting for the distribution of NPIs. The unacceptable (72a) likewise includes this operator, (72b). But in the structure without the negation (or some other downward entailing expression), the operator gives rise to entailments that are

systematically contradictory. Hence the sentence is unacceptable. This analyses Ladusaw's (1979) generalization about NPI distribution.

- (72) a. \* I saw anyone.  
 b. [EXH [I saw anyone]]  
 c.  $\exists x[P(x) \ \& \ \text{I saw } x]$ , and  
 for all  $q$ ,  $q = \lambda w.\exists x[P'(x) \ \& \ \text{I saw}_w x]$ , for some  $P' \subset P$ :  
     if  $[\lambda w.\exists x[P(x) \ \& \ \text{I saw } x]] \neq \Rightarrow q$ , then  $q(w) = 0$   
     iff  $\exists x[P(x) \ \& \ \text{I saw } x]$ , and there is no particular  
      $x$  that I saw. — contradiction

Here's what is interesting for present purposes: the analysis of NPIs cannot be reconciled with the Hamblin semantics as defined in Sect. 3.1. The Hamblin alternatives are somewhat different than the property alternatives that the NPI theories would assume—we will return to this point in Sect. 3.3 and it will be revealed to be non-essential. But another crucial property of the analysis in Sect. 3.1 is that the bare indeterminate pronoun has no ordinary semantic value. This is incompatible with the EXH operator, which requires both an ordinary and an alternative semantic value for its sister, as seen in (71). Thus, the bare indeterminate pronoun cannot be evaluated by EXH, which implies that it cannot be analysed as an NPI. (73) illustrates.

- (73) a. \* [EXH [<sub>XP</sub> NOT [I saw hwa]]]  
 b. Hamblin alternatives:  $[[hwa]]_o$  is undefined.  
      $[[hwa]]_{Alt} = \{x:x \in D\} = \{A, B, C, \dots\}$   
 c.  $[[XP]]_o$  is undefined. <== unsuitable as input for EXH  
      $[[XP]]_{Alt} = \{\lambda w.\text{I didn't see}_w A, \lambda w.\text{I didn't see}_w B, \dots\}$

In consequence, I suggest that OE bare indeterminate pronouns are plain existentials, which may occur in NPI environments, taking narrow scope (e.g. in (8b), (11b) from Sect. 2). They are to be analysed with EXIST. We know that EXIST is an available evaluating operator because of existential readings in non-NPI contexts (e.g., (4a), (7c), (9c)). We come back to the NPI analysis and EXH when we analyse the *ge*-series in the next subsection.

### 3.2.4 Interim summary

I have applied a classical alternative semantics to OE bare indeterminate pronouns, taking their use in questions as the starting point for the analysis. Accordingly, they introduce Hamblin alternatives into the calculation. The alternatives are evaluated by an associated operator, OP in (50). Alternative evaluating operators OP for OE bare indeterminate phrases include Q, ALL, EXIST, and (as I will argue) All-Alt, but not EXH.

Bare indeterminates must be in the scope of one of these operators because of their undefined ordinary semantic value. This follows from the principle of interpretability: a sentence must have an ordinary semantics (Heim and Kratzer 1998, version in (74) from Beck 2006, (52)).

(50) [OP [... indeterminate pronoun...]]  
└──────────────────┘

(74) Principle of Interpretability:  
 An LF must have an ordinary semantic interpretation.

Next, we look at how the morphologically derived forms of the indeterminate pronouns fit into the picture.

### 3.3 The *ge*-series

The prefix *ge*- removes from the interpretive options of OE indeterminate pronouns the interrogative and FCR uses. The *ge*-series has universal and existential interpretations and potentially FCI and NPI uses (cf. Sect. 2, summary repeated below).

(75)	question	FCR	FCI	NPI	Univ	Exist
<i>ge</i> -series			√ <sup>?</sup>	√ <sup>?</sup>	√	√

It would be attractive to derive the difference to the bare series from the semantic contribution of *ge*-. In a nutshell, I argue in this section that the prefix *ge*- creates an ordinary semantic value for the indeterminate pronoun. This makes the pronoun unable to combine with Q (predicting unavailability of question and FCR uses), but able to combine with EXH (predicting genuine NPI uses). I motivate a proposal to this effect in Sect. 3.3.1, and then apply it to the different readings of indeterminate pronouns of the *ge*-series in Sect. 3.3.2.

#### 3.3.1 The semantic contribution of *ge*-

I propose (76) as the semantic contribution of prefix *ge*-:

(76) a.  $[[ge\text{-}XP]]_o = \cup[[XP]]_{Alt}$   
           (if the elements of  $[[XP]]_{Alt}$  are not of type  $\langle e \rangle$ )  
            $= \lambda P.\lambda w.\exists x[x \in [[XP]]_{Alt} \ \& \ P(w)(x)]$   
           (if the elements of  $[[XP]]_{Alt}$  are type  $\langle e \rangle$ )

b.  $[[ge\text{-}XP]]_{Alt} = [[XP]]_{Alt}$

This semantic contribution of the prefix can be motivated by (though not directly derived from) the semantic contribution of the prefix's likely source, the lexical item *ge*. Let's take a look at the lexical item.

Translations offered for lexical *ge* (i.e. the free morpheme, not the prefix) in, for example, B&T are 'and, also'. (77) provides some examples. (77a, b) are typical uses, with *ge* as a conjunctive marker preceding both conjuncts.



- (77) a. He bebyt **ge** windum **ge** sæ  
*he rules GE winds GE seas*  
 ‘He rules both the winds and the seas’ (et ventis et mari imperat)  
 (B&T; Lk. Bos. 8, 25 and elsewhere)
- b. ge magon geseon and tocnawan ægðer **ge** god **ge** yfel,  
*you may see and know either GE good GE evil*  
 ‘You will know both good and evil’  
 (Thorpe 1844, 19)
- c. **Ge** swylce seo here-pad  
*also such the war shirt*  
 ‘and in like manner the war shirt (shall moulder after the warrior)’  
 (B&T; Beo. Th. 4508; B. 2258. The Anglo-Saxon Poem of  
 Beowulf, edited by Benjamin Thorpe, Oxford, 1855)

Let’s consider the conjunctive use. Following Mitrovic and Sauerland (2014), I call conjunctive markers marking both conjuncts polysyndetic conjunctions. According to Mitrovic and Sauerland (2014), the structure of a polysyndetic conjunction like ‘ge A ge B’ is as in (78). The morpheme *ge* marks each conjunct; it is not itself the logical conjunction ‘and’. To indicate that ‘and’ is semantically present but not pronounced, I use strike-through ‘~~and~~’ in (78).

(78) [[ge A] ~~and~~ [ge B]]

It has been observed (Breindl 2008) that such polysyndetic conjunctions impose particular requirements on the context. A good context is one in which both conjuncts are given and are understood as complementary and exhausting the relevant possibilities.<sup>7</sup> I illustrate with some examples from German, which has the polysyndetic conjunction *sowohl A als auch B* (‘both A and B’) (examples inspired by Breindl 2008):

- (79) a. context: A and B live together. A is coming home from the store.  
 B: What did you buy?  
 A: # Ich habe sowohl Milch als auch Socken gekauft.  
*I have and milk and socks bought*  
 ‘I have bought both milk and socks.’
- b. context: A wants to buy a new pair of pants. He has chosen a type of pants, but cannot make up his mind whether he wants them in blue or in red. B is well aware of the dilemma. A is coming home from the store.  
 B: So what did you buy?  
 A: Ich habe sowohl die blaue als auch .die rote Hose gekauft  
*I have and the blue and the red pants bought*  
 ‘I have bought both the blue and the red pants.’

<sup>7</sup> Breindl (2008, p. 269): “Sie [conjunctions of the form *sowohl A als auch B*; SB] sind umso akzeptabler, je eher es dem Hörer gelingt, die verknüpften Entitäten als komplementäre Teilmengen zu interpretieren und daraus eine abgeschlossene Vereinigungsmenge zu bilden.” (They are the more acceptable, the more the hearer succeeds in understanding the entities A and B as complementary subsets and forming a closed union of them.).

- (80) a. Es war einmal ein König, der hatte sowohl einen  
*there was once a king who had and a*  
 Sohn als auch eine Tochter.  
*son and a daughter*  
 ‘There once was a king who had both a son and a daughter.’
- b. ?? Es war einmal ein König, der hatte sowohl eine  
*there was once a king who had and a*  
 Warze am Gesäss als auch ein schönes Schloss.  
*wart on his bottom and a beautiful castle*  
 ‘There once was king who had both a wart on his bottom and a beautiful castle.’

Thus, the truth conditional impact of a polysyndetic conjunction is logical conjunction, and it makes available an alternative semantic value amounting to the corresponding (exclusive) disjunction. The disjunction has to be ‘around’ in the context. The question is how to derive the meaning and the context requirement. I consider the simplified prototype in (81) instead of actual examples like (77a, b) and (79), (80). We have seen that (82) is the desired interpretive result. We have also seen that appropriate contexts provide the alternatives sketched in (83). This can be understood as a mutual contrast requirement for the two conjuncts, (84) (cf. Rooth 1992): ‘rain’ contrasts with ‘snow’ and vice versa.

- (81) a. It is *ge* raining *ge* snowing  
 b. [[[*ge* [ $\alpha$  it is raining]]] ~~and~~ [*ge* [ $\beta$  it is snowing]]]
- (82) a. [[[[*ge it is raining*] ~~and~~ [*ge it is snowing*]]]]<sub>o</sub> =  $\lambda w$ .rain( $w$ ) & snow( $w$ )  
 b. [[[[*ge it is raining*] ~~and~~ [*ge it is snowing*]]]]<sub>Alt</sub> = { $\lambda w$ .rain( $w$ )  $\vee$  snow( $w$ )}  
 prag. strengthened: { $\lambda w$ .(rain( $w$ )  $\vee$  snow( $w$ )) &  $\neg$ (rain( $w$ ) & snow( $w$ ))}
- (83) a. [[*it is raining*]]<sub>o</sub> =  $\lambda w$ .rain( $w$ ) [[*it is raining*]]<sub>Alt</sub> = { $\lambda w$ .rain( $w$ ),  $\lambda w$ .snow( $w$ )}  
 b. [[*it is snowing*]]<sub>o</sub> =  $\lambda w$ .snow( $w$ ) [[*it is snowing*]]<sub>Alt</sub> = { $\lambda w$ .rain( $w$ ),  $\lambda w$ .snow( $w$ )}
- (84) A constituent  $\alpha$  contrasts with a constituent  $\beta$  iff [[ $\beta$ ]]<sub>o</sub>  $\in$  [[ $\alpha$ ]]<sub>Alt</sub> and [[ $\beta$ ]]<sub>o</sub>  $\neq$  [[ $\alpha$ ]]<sub>o</sub>.

In order to derive (82)—that is, in order to predict the right overall semantics and pragmatics of polysyndetic conjunction—the morpheme *ge* needs to negotiate the ordinary and alternative semantic values of the conjuncts. The semantics in (85) will accomplish this. The idea is that *ge* leaves the ordinary semantics unchanged (an identity function), but forms the union over the alternatives, which amounts to their disjunction. I further assume that an alternative to the disjunction is conjunction, and that a disjunction can be pragmatically strengthened to an

exclusive disjunction (e.g., Sauerland 2004; Fox 2007). The crucial steps in the calculation are given in (86).

- (85) a.  $[[ge\ XP]]_o = [[XP]]_o$   
 b.  $[[ge\ XP]]_{Alt} = \cup[[XP]]_{Alt}$   
     (if the elements of  $[[XP]]_{Alt}$  are not of type  $\langle e \rangle$ )  
      $= \lambda P.\lambda w.\exists x[x \in [[XP]]_{Alt} \ \& \ P(w)(x)]$   
     (if the elements of  $[[XP]]_{Alt}$  are type  $\langle e \rangle$ )
- (86) a.  $[[[ge\ it\ is\ raining]]]_o = \lambda w.rain(w)$   
 $[[[ge\ it\ is\ raining]]]_{Alt} = \cup\{\lambda w.rain(w), \lambda w.snow(w)\}$   
      $= \{\lambda w.rain(w) \vee snow(w)\}$   
 b.  $[[[ge\ it\ is\ snowing]]]_o = \lambda w.snow(w)$   
 $[[[ge\ it\ is\ snowing]]]_{Alt} = \cup\{\lambda w.rain(w), \lambda w.snow(w)\}$   
      $= \{\lambda w.rain(w) \vee snow(w)\}$   
 c.  $[[[[[ge\ it\ is\ raining] \ \& \ [ge\ it\ is\ snowing]]]]_o = \lambda w.rain(w) \ \& \ snow(w)$   
 $[[[[[ge\ it\ is\ raining] \ \& \ [ge\ it\ is\ snowing]]]]_{Alt}$   
      $= \{\lambda w.(rain(w) \vee snow(w)) \ \& \ (rain(w) \vee snow(w)),$   
      $\lambda w.(rain(w) \vee snow(w)) \vee (rain(w) \vee snow(w))\}$   
      $= \{\lambda w.rain(w) \vee snow(w)\}$

For present purposes, the core proposal is that *ge* performs the two semantic operations in (85), identity and union. With some plausibility, both are also at work in its other potential use as ‘also’ (77c). I illustrate informally in (87).

- (87) a. I also met Chris<sub>F</sub>.  
     [also <sub>XP</sub> I met Chris<sub>F</sub>]  
 b. (i) Assertion: I met Chris.  
     (ii) Presupposition: I met someone.  
 c.  $[[also\ XP]]_o = [[XP]]_o$   
 $[[also\ XP]]_o \text{ presupposes } \cup[[XP]]_{Alt}$

Now, we turn to the prefix *ge-* as it occurs in indeterminate pronouns of the *ge-* series. We can assume that prefix *ge-* developed from the additive particle *ge*. The lexical entry in (85) cannot be used without modification, given the Hamblin semantics of the bare indeterminate pronoun, because the ordinary semantic value of the bare indeterminate pronoun is undefined. I propose (88) = (76) as the semantic contribution of prefix *ge-*:

- (88) a.  $[[ge\text{-}XP]]_o = \cup[[XP]]_{Alt}$   
     (if the elements of  $[[XP]]_{Alt}$  are not of type  $\langle e \rangle$ )  
      $= \lambda P.\lambda w.\exists x[x \in [[XP]]_{Alt} \ \& \ P(w)(x)]$   
     (if the elements of  $[[XP]]_{Alt}$  are type  $\langle e \rangle$ )  
 b.  $[[ge\text{-}XP]]_{Alt} = [[XP]]_{Alt}$

That is, the same two semantic operations are performed (identity and union), but they are distributed over alternative and ordinary semantics differently, using the

alternative semantics twice and outputting two different values. This makes it possible for prefix *ge-* to combine with bare indeterminate phrases.

The operator in (88) has independently been suggested by Erlewine (2017) in the analysis of Toba Batak *manang*. This morpheme similarly negotiates between ordinary and alternative semantic values, although the specific data set to be accounted for is not the same, and hence *manang*'s combination with other operators is not the same either. But the analytical parallels will come up in the discussion below; see especially Sect. 4.

In (89), we see prefix *ge-* in combination with the indeterminate pronoun *hwa* 'who'. The prefix does not affect the alternative semantic value; but it adds an ordinary semantic value, which is an existential quantifier/disjunction over the alternatives.

- (89) a.  $[[ge-hwa]]_o = \lambda P.\lambda w.\exists x[x \in [[hwa]]_{Alt} \ \& \ P(w)(x)]$   
           e.g.,  $[\lambda P.\lambda w.P(w)(A) \vee P(w)(B) \vee P(w)(C)]$   
       b.  $[[ge-hwa]]_{Alt} = [[hwa]]_{Alt} = \{z: z \in D\}$   
           e.g.,  $\{A, B, C\}$

Next, we examine how the *ge*-series combines with its compositional context to yield the sentence interpretations available for this type of indeterminate pronoun in OE.

### 3.3.2 Indeterminate pronouns of the *ge*-series in their sentence contexts

Below I repeat (75), the summary of the interpretive possibilities for the *ge*-series from Sect. 2:

- |                   |          |     |            |            |                |                |
|-------------------|----------|-----|------------|------------|----------------|----------------|
| (75)              | question | FCR | FCI        | NPI        | Univ           | Exist          |
| <i>ge</i> -series |          |     | $\sqrt{?}$ | $\sqrt{?}$ | $\sqrt{\quad}$ | $\sqrt{\quad}$ |

The first observation that the analysis needs to capture is that interrogative and FCR uses are not possible for the *ge*-series. I propose to refine the definition of the Q operator as in (90), which I take from Erlewine (2017). (90) will yield a well-defined question semantics when its scope contains an indeterminate pronoun with an undefined ordinary semantic value, like the OE bare series, for example (51'b). (90) will yield undefinedness when the pronoun has the semantic properties of the *ge*-series, for example (89). This is illustrated in (91).<sup>8</sup> Under the analysis of Hirsch

<sup>8</sup> Here is an alternative proposal: It seems reasonable to suppose that if an expression makes available an ordinary meaning, this meaning cannot be ignored in the further semantic computation. This excludes composing a question semantics in a hypothetical structure like (91), without resorting to (90). While the alternatives would provide the necessary input for the Q operator, at the level of the ordinary semantics we would calculate 'someone' and 'someone left', which are never used. We can conjecture that this is inappropriate. (i) might be a principle of the semantic component of the grammar.

(i) Principle of Full Interpretive Use (PFIU):

An ordinary semantic value must be used in the composition.

The PFIU is more general and, if correct, might make a stipulation like (90) unnecessary. I leave this issue to further research.

(2016), (90) also correctly predicts that the *ge*-series cannot be used in FCRs, whose internal composition is the same as that of questions.

(90)  $[[Q \phi]]_o$  is only defined if  $[[\phi]]_o$  is undefined. Then,  $[[Q \phi]]_o = [[\phi]]_{Alt}$

- (91) a. # *gehwa left?*  
           intended: Who left?  
       b. \*  $[Q [gewha \text{ left}]]$

We consider universal and existential interpretations of the *ge*-series next. Examples are repeated in (92a) and (93a). I once more discuss simple hypothetical structures (92b) and (93b) in the semantic analysis.

- (92) a. *Swa þonne her fram þære arleasan ðeode, hwæðere rihte*  
           *so then here from that impious people though just*  
           *Godes dome, neh ceastra gehwylce & land*  
           *God's judgement near (of) cities every (pl) and land*  
           *forheregeode wæron.*  
           *wasted were*  
           (cobede, Bede\_1:12.52.27.487)

‘So then here **almost every city** and district was wasted by this impious people, though it was by the just judgment of God.’ (Miller)

- b. *Ge-hwa left.*  
       ‘Everyone left.’
- (93) a. & brohte of his weorce **gehwylce** grene &  
           *and brought of his work GE.which green and*  
           *wel stincende wyrta.*  
           *good smelling herbs*  
           (cogregdC, GDPref\_and\_3\_[C]:1.181.16.2225)  
           ‘and brought from his work **some** green and pleasantly smelling herbs.’
- b. *Ge-hwa left.*  
       ‘Someone left.’

Basically I propose the same analysis as before, (94) and (95).<sup>9</sup>

<sup>9</sup> If we assume the PFIU from the preceding footnote, the question arises how the ordinary semantics of the sister of the operator is used. I suggest that it may go into an existential PSP of the quantifier. A version of ALL that is revised accordingly is given in (i), and an example in (ii). A similar proposal can be found in Uegaki (2018) for Japanese *-ka* indefinites. For OE, the existence and content of such a presupposition is unfortunately hard to check on the basis of corpus data, as noted in the discussion of NPI uses of the *a*-series. I will not pursue the matter in more detail.

- (i)  $[[ALL ZP]]_o(w)$  is only defined if  $[[ZP]]_o(w) = 1$ .  
       Then,  $[[ALL ZP]]_o(w) = 1$  iff for all  $p \in [[ZP]]_{Alt}$ :  $p(w) = 1$
- (ii)  $[[ALL \textit{ge-hwa left}]]_o(w)$  is only defined if  $\exists x[x \in \{z: z \in D\} \& x \textit{ left in } w]$ . Then,  
        $[[ALL \textit{ge-hwa left}]]_o(w) = 1$  iff for all  $p, p \in \{\lambda w.x \textit{ left}_w \mid x \in D\}$ :  $p(w) = 1$

- (94) a. [ALL [XP *ge-hwa left*]]  
 ‘Everyone left.’  
 b. [[*ge-hwa left*]]<sub>o</sub> =  $\lambda w. \exists x [x \in \{z: z \in D\} \& x \text{ left in } w]$   
 e.g. [ $\lambda w. A \text{ left}_w \vee B \text{ left}_w \vee C \text{ left}_w$ ]  
 [[*ge-hwa left*]]<sub>Alt</sub> =  $\{\lambda w. x \text{ left}_w \mid x \in D\}$   
 e.g.  $\{\lambda w. A \text{ left}_w, \lambda w. B \text{ left}_w, \lambda w. C \text{ left}_w\}$   
 c. [[ALL *ge-hwa left*]]<sub>o</sub> (w) = 1 iff for all p,  $p \in \{\lambda w. x \text{ left}_w \mid x \in D\}$ : p(w) = 1
- (95) a. [EXIST [XP *ge-hwa left*]]  
 ‘someone left.’  
 b. [[EXIST *ge-hwa left*]]<sub>o</sub>(w) = 1 iff there is a p  $\in \{\lambda w. x \text{ left}_w \mid x \in D\}$ : p(w) = 1

Lastly, we look at uses of *ge*-indeterminate pronouns as polarity items. In Sect. 3.5, I present evidence suggesting that the *ge*-series can be used as FCI. The analysis from Sect. 3.2. should thus apply to pronouns of the *ge*-series as well. Since they do not bring any new feature to the analysis of FCI, I will not repeat the analysis.

Instead, let’s turn to uses of *ge*-indeterminate pronouns as NPIs. It is here that we see the second benefit of the specific interpretive contribution postulated for *ge*- in (88): the existential meaning (‘someone left’) is the right ordinary semantic value for the standard analysis of NPIs. I further propose to replace the Krifka/Lahiri/Chierchia-alternatives by Hamblin alternatives, making the analysis of NPIs compatible with a Hamblin semantics of indeterminate phrases. The same step is taken in Erlewine and Kotek (2016) in a semantic analysis of Tibetan NPIs. I repeat an attested example in (96a) and analyse the hypothetical structure in (96b) in (97) (the semantics of the EXH operator (71) is repeated for convenience). (98) demonstrates that the revised analysis preserves the prediction of the original analysis that EXH cannot evaluate an NPI in a non-downward entailing context.

- (96) a. Ne heold he no þa Eastran, swa swa sume men  
*neg held he not the Easter so as some men*  
 wenað, mid Iudeum on feowertynenihtne monan  
*think with Jews on fourteenth moon*  
**gehwylce dæge** on wucan, ac a symle on  
*GE.which day in week but ever always on*  
 Sunnandæge fram feowertynenihtum monan oð twentigesnihtne,  
*Sunday from fourteenth moon up to twentieth night*  
 for þam geleafan þære Dryhtenlican æriste,...  
*for the belief (of) the lordly resurrection,...*  
 (cobede, Bede\_3:14.206.27.2104)  
 ‘He did not keep Easter, as some imagine, in agreement with the Jews, on the fourteenth night of the moon on **any day** of the week, but always on Sunday, from the fourteenth night of the moon up to the twentieth night, from belief in our Lord’s resurrection,...’ (Miller)
- b. If *ge-hwa left*, it rained.  
 ‘If anyone left, it rained.’



ALL and EXIST, All-Alt and EXH, but not Q. This accounts for their range of interpretive possibilities.

(50) [OP [... indeterminate pronoun...]]  
└──────────────────┘

We may ask whether one of these operators must be in the structure. Note that without any alternative evaluating operator, we would end up with a semantics exemplified in (99). This is an existential interpretation which makes available Hamblin alternatives.

(99) a.  $[[ge-hwa\ left]]_o = [\lambda w.A\ left_w \vee B\ left_w \vee C\ left_w]$   
           = someone from ABC left  
       b.  $[[ge-hwa\ left]]_{Alt} = \{[\lambda w.A\ left_w], [\lambda w.B\ left_w], [\lambda w.C\ left_w]\}$

Such a pair of ordinary and alternative semantics turns out to be problematic, for the following reason: We assume that alternative semantic values are used in the evaluation of focus. We further assume that at root level at the latest, focus must be evaluated (i.e. a connection to the sentence's context must be made). The operator responsible is Rooth's (1992)  $\sim$  operator. The  $\sim$  requires that the ordinary meaning of an expression be one of the alternatives, i.e., that in a structure  $[\sim XP]$ ,  $[[XP]]_o \in [[XP]]_{Alt}$ . (99) violates this requirement. Hence the  $\sim$  would not be able to embed (99) (or any structure containing it in which the ordinary and alternative semantic values are passed on); that is, we predict ungrammaticality, (99').

(99') \*  $[\sim [gehwa\ left]]$

But this means that sentence structures with a pronoun of the *ge*-series without an appropriate evaluating operator (ALL, EXIST, All-Alt or EXH) will not be well-formed. I follow Erlewine (2017) in suggesting that for this reason, the item in question (here: the indeterminate *ge*-pronoun) needs to be in the scope of one of the evaluating operators. Structures with one of the evaluating operators will be well-formed if we assume, standardly, that the operator resets the alternative semantic value to a singleton set containing the ordinary semantic value, for example:

(100) a.  $[[ALL\ ZP]]_o(w) = 1$  iff for all  $p \in [[ZP]]_{Alt}$ :  $p(w) = 1$   
       b.  $[[ALL\ ZP]]_{Alt} = \{[[ALL\ ZP]]_o\}$

In conclusion, then, the *ge*-series must be in the scope of an appropriate operator because (88) creates structures that violate Rooth's (1992) constraint that  $[[XP]]_o \in [[XP]]_{Alt}$ .

OE *ge*- offers a window into the role of operators negotiating the ordinary semantics/alternative semantics distinction. There is a set of items in language that seem to fluctuate between an alternative and an ordinary semantics (for example disjunction, indeterminate phrases, and possibly others like Toba Batak *manang*



(see also the literature on so-called Q-particles, e.g., Hagstrom 1998; Cable 2010; Slade 2011; and Sect. 4); an early reference is Ramchand 1997). These items raise the question how their alternative semantic contribution and their ordinary semantics interact. (88) is my proposal for the issue at hand, and it is identical to Erlewine's (2017) proposal developed for a somewhat different data set. Thus (88) may be the (or one of the) operator(s) in language that allows an alternative trigger to also enter into ordinary semantic composition.

This issue only becomes apparent in a two-tier system with ordinary and alternative semantics, which is the kind of general theory that is needed. This requires transforming Alonso-Ovalle's (2006) analysis of disjunction, Shimoyama (2001), Kratzer and Shimoyama (2002), or other analyses in terms of an alternative semantic tier only, into a two-tier semantic system (see Uegaki 2018 for recent discussion). Let me also emphasize that the issue with *ge-* is about operators that negotiate the two tiers which are *not* the evaluating operators. This is clear because of the pervasive ambiguity of OE indeterminate *ge-*phrases and similarly the ambiguity in Toba Batak analysed by Erlewine.

### 3.4 The A-series

Remember from Sect. 2 that the interpretive possibilities of the *a*-series of indeterminate phrases are a proper subset of those of the *ge*-series: existential interpretations are not attested. Recall also that the *a*-series must have a genuine NPI use, because of the lack of existential interpretations outside of NPI licensing contexts, and the inappropriate interpretation a wide scope universal would yield. An NPI use in turn implies that the indeterminate phrase has an ordinary semantic value, adding to the motivation of the semantic step suggested in the analysis of *ge-*.

(101)	question	FCR	FCI	NPI	Univ	Exist
<i>a</i> -series			√ <sup>?</sup>	√	√	

Once more, it would be attractive to derive the reduction of readings we see in (101) from the presence of the prefix *a-*, which is added on top of *ge-* to the indeterminate pronoun morphologically. Thus we will take the analysis of the *ge*-series from the preceding subsection as the starting point and ask how *a-* changes the picture.

Interestingly, the surviving readings (FCI, NPI, universal) are all interpretations in which the alternative evaluating operator (All-Alt, EXH, ALL) is a universal quantifier. This corresponds to the meaning of OE lexical *a*, which is the universal quantifier 'always'. (102) sketches a semantics for *always*, a universal quantifier over times.

$$(102) \quad [[\textit{always}_C]] = \lambda p_{\langle i, st \rangle} . \lambda w. \text{ for all } t \text{ in } C, p(t)(w) = 1$$

I suggest that the contribution of the prefix *a-*, which is derived from lexical *a*, is to impose the requirement that an evaluating operator should have universal quantificational force. I call this 'universal agreement' and illustrate with (104). (Here, as well, the structure interpreted in the semantics, (103b), is a sample

structure used to simplify realistic data in which an *a*-indeterminate pronoun is interpreted universally, e.g., (103a) and the data from Sect. 2.)

- (103) a. Gif mon oðres wudu bærneð oððe heaweð unaliefedne,  
*if man other's wood burn or fell unlawfully*  
 forgielde **ælc great treow** mid V scillingum, & siððan  
*repay ÆLC great tree with 5 shillings, and afterwards*  
**æghwylc**, sie swa fela swa hiora sie, mid V pæningum;  
*A.GE. which, be so many so (of) them be, with 5 pence;*  
 & XXX scillinga to wite.  
*and 30 shillings to punishment.*  
 (colawaf, LawAf\_1:12.62)

‘If a man burns or fells another’s woodland illegally, repay **each big tree** with 5 shillings, and then **each one**, as many as there were, with 5 pence; and 30 shillings fine.’

Wenn jemand das Gehölz eines anderen ohne Erlaubnis abbrennt oder abhaut, so vergelte er jeden grossen Baum mit 5 Schill., und weiterhin jeden, sei es so viele als ihrer seien, mit 5 Pfennigen; und 30 Schill. zur Strafe. (Liebermann p. 57)

- b. Æghwa left.  
 ‘Everyone left.’

- (104) a. [ALL [*a-ge-hwa left*]]

□

universal agreement

‘Everyone left.’

- b. [[*a-ge-hwa left*]]<sub>o</sub> =  $\lambda w. \exists x [x \in \{z: z \in D\} \& x \text{ left in } w]$   
 e.g., [ $\lambda w. A \text{ left}_w \vee B \text{ left}_w \vee C \text{ left}_w$ ]  
 [[*a-ge-hwa left*]]<sub>Alt</sub> =  $\{\lambda w. x \text{ left}_w \mid x \in D\}$   
 e.g.,  $\{\lambda w. A \text{ left}_w, \lambda w. B \text{ left}_w, \lambda w. C \text{ left}_w\}$
- c. All propositions ‘*x left*’ ( $x \in D$ )’ are true.

A model for universal agreement is negative concord. In the analysis of negative concord, I follow Penka (2011): the semantically interpreted element (negation), which may be silent, stands in an agreement relation to an element which does not contribute to the composition (i.e., does not express negation), but makes it morphologically visible. (105) from OE (a negative concord language) illustrates: the negative morphology on *nan* ‘not-one’ is not interpreted, but the element requires the presence of a sentence negation. This can be modelled in terms of syntactic Agreement (Penka 2011): *nan* has a feature [uNeg] which requires interpretable [Neg] in a suitable structural relationship.

- (105) & cwæð: **Nis** hit **nan** wundor þeah hwa wene þæt  
*and said not.is it not.one wonder if who thinks that*  
 swelces gehwæt nu unmyndlinga geberige, ðonne he ne  
*such GE-what now unexpectedly happens when he not*  
 con ongitan & gereccan forhwy swylc God geþafað.  
*can understand & explain why such god permits*  
 (coboeth.Bo:39.125.22.2495)

‘and said: “It is no wonder though anyone should think that some such thing happens now without planning, when he does not know how to understand and explain why God permits such things.’ (The Old English Boethius, S. Irvine and M. Godden 2012, Harvard University Press)



- (109) a. (& þrie Scottas comon to Ælfrede cyninge,  
 on anum bate butan **ælcum** gereþrum (of Hibernia,)   
*in a boat without AELC oars*  
 ‘And three Irishmen came to King Alfred in a boat without **any** oars’  
 (B&T; Chr.891; P.82,19; Two of the Saxon Chronicles, ed. Charles  
 Plummer; Translation: Kahlas-Tarkka, L. 1993: Towards the modern  
 English dichotomy between *every* and *each*. In Matti Rissanen,  
 Merja Kitö & Minna Palander- Collin: Early English in the Computer  
 age. Mouton de Gruyter, Berlin, 201–218
- b. The boat did not have *ælc* oars.  
 ‘The boat did not have any oars.’
- (110) a. [EXH [not [*the boat have a-hwelc oars*]]]  
 \_\_\_\_\_ universal agreement  
 ‘The boat did not have any oars.’
- b. The boat didn’t have oars and all stronger alternatives are false.

This, then, is the analysis that I suggest for the *a*-series: indeterminate phrases of the *a*-series have the semantics of the *ge*-series and in addition carry a feature [u $\forall$ ]. All three operators responsible for the interpretations available to OE *a*-indeterminate phrases have interpretable [ $\forall$ ]; that is, they are universal quantifiers.

This predicts that alternative evaluating operators for OE *a*-(*ge*-) indeterminate phrases include ALL, EXH and probably All-Alt, but not EXIST or Q. This accounts for the range of available interpretations of the *a*-series.

### 3.5 OE indeterminate pronouns as FCI?

This section returns to the question of whether OE indeterminate pronouns have an analysis as FCIs. Remember that superficial observation doesn’t allow us to decide because all three series of indeterminate pronouns permit a universal interpretation. At the same time, the descriptive literature reveals a clear intuition that an FCI use is available, as witnessed by frequent translations in terms of FCI *any* or *who/whatever* ((e.g., (12), (65a, b)).

In this section, I will concentrate on the intuition that FCIs, in contrast to plain universal quantifiers, have an intensional component. Remember from Sect. 3.2 the analysis in (111), (112), according to which quantification is over possible objects of the indeterminate phrase description. Plain universal quantifiers, on the other hand, make an assertion (and possibly have a presupposition) that holds in the actual world.

- (111) a. [All-Alt<sub>R</sub> [GEN [*men praise hwa<sub>R</sub> of the good*]]]  
 b. [[GEN *men praise hwa<sub>R</sub> of the good*]]<sub>Alt</sub>  
 = {that men will praise *x* | *x* a possible good thing}  
 c. All plausible propositions ‘that men will praise *x*’ (*x* a possible good thing) are true.

- (112)  $[[\text{All-Alt}_R \text{XP}]_o(w) = 1$  iff for all  $p$  such that  $p \in [[\text{XP}]_{\text{Alt}}]$ :  
 for all  $w'$  such that  $R(w')(w)$ ,  $p(w') = 1$   
 $R(w')(w)$  iff  $w'$  follows the normal course of events in  $w$  ( $R$  is realistic).

So let's ask whether there are examples of indeterminate pronouns that are more plausibly understood as intensional. I present some data and their interpretation below.

- (113) a. *Se sit, swelce he sitte on ðæm stole ðæs forhwierfdan*  
*who sits, as he sits on the chair (of) the perverse*  
*gemotes, se ðe hine upahefeð on ða ofermetto*  
*assembly who that him elevates in the arrogance*  
*swelcre unryhtwisnesse ðætte he fullfremme hwelc yfel*  
*such unrighteousness that he fulfills which evil*  
*huru ðurh geðeaht.*  
*certainly by design*  
 (cocura,CP:56.435.24.3093)  
 'He sits, as it were, in the chair of the perverse assembly, who exalts himself with the pride of such unrighteousness that he perpetrates every evil designedly.' (Sweet) ('... **any evil...**')  
 b.  $[\text{All-Alt}_R [\text{GEN } [he \text{ perpetrates } [hwelc \text{ yfel}]_R \text{ designedly}]]]$   
 c. All plausible propositions 'that he perpetrates  $x$  designedly' ( $x$  a possible evil) are true.  
 (intuition: if  $x$  were an evil he might commit, he would commit  $x$  by design.)
- (114) a. *Ða geceas he him ane burg wið þone sæ, Bizantium wæs*  
*then chose he him a fortress by the sea Byzantium was*  
*hatenu, to ðon þæt him gelicade þæt hie þær mehten*  
*called, because that him pleased that they there might*  
*betst frið binnan habban, & eac þæt hie þær gehendaste*  
*best peace within have & also that they there handiest*  
*wæren on gehwelc lond þonan to winnanne;*  
*be against GE.which land from there to fight*  
 (coorosiu,Or\_3:7.63.32.1241)  
 '(Then he chose a fortress by the sea, called Byzantium, because he liked that they might best find peace there, and also) that they would be most handy there to fight **any** land from there.'  
 b.  $[\text{All-Alt}_R [\text{would } [\text{CP } \text{that } [\text{IP } \text{they } [\text{VP } \text{there handiest be}$   
 $[\text{IP } \text{on gehwelc lond}]_R \text{from there to fight}]]]]]]]$   
 c. All plausible propositions 'that they are handiest there to fight  $x$  from there' ( $x$  a possible hostile land) are true.  
 (intuition: if  $x$  is a possible hostile land, then they are handiest there to fight  $x$ .)

- (115) a. Sua ðu meah<sup>t</sup> ælcne unðeaw on ðæm menn æresð be  
*so you can ÆLC vice in the man first by*  
 sumum tacnum ongietan, hwæs ðu wenan scealt, ær  
*some sign recognize, what you expect shall, before*  
 he hit mid wordum oððe mid weorcum cyðe.  
*he it with word or with deed make known*

(cocura,CP:21.157.19.1076)

‘So you can recognize **any vice** in the man first by some sign, what to expect, before he reveals it with words or deeds.’ (Sweet)

- b. [All-Alt<sub>R</sub> [may [you recognize {ælc unðeaw}<sub>R</sub> by some sign]]]  
 c. All plausible propositions ‘that you can recognize x by some sign’ (x a possible vice) are true. (intuition: if x were a vice in the man, you could recognize x first by some sign.)
- (116) a. & IIII Wodnesdagas on IIII ymbrenwicum ðeowum monnum eallum  
 & four Wednesdays on four Ember weeks (to) slave men all  
 sien forgifen, þam þe him leofost sie to sellanne  
*be given, that that him best liked be to give*  
 æghwæt ðæs ðe him ænig mon for Godes noman geselle  
*A.GE.what which that him any man in God’s name gave*  
 oððe hie on ænegum hiora hwilsticcum gearnian mægen.  
*or he in any their moment earn may*
- (colawaf,LawAf\_1:43.1.155)
- ‘The four Wednesdays in the four Ember weeks shall be granted [as holidays] to all slaves whose chief desire is to sell **anything** which has been given to them in God’s name, or which they are able to acquire by their labour in any portions of time at their disposal.’ (The laws of the earliest English kings, F. L. Attenborough, Cambridge University Press 1922 p. 85, 87)
- b. [All-Alt<sub>R</sub> [may [they sell {æghwæt that any man gave them}<sub>R</sub>]]]  
 c. All plausible propositions ‘that they may sell x’ (x a possible thing someone gave them) are true. (intuition: if x were a thing given to them by someone, they could sell x.)

A more formal version of the truth conditions of (115) is given in (117).

- (117)  $\forall x[\exists w'[w'R@ \& \text{vice}(x)(w') \& \text{in}(x)(M)(w')] \rightarrow \exists w'\exists y[w'R@ \& \text{sign}(y)(w') \& \text{recognize}(\text{you})(x)(y)(w')]]$

The interpretation is intensional; it is about potential vices in the man, not actual vices. At the same time, *ælc unðeaw* takes scope over *meah<sup>t</sup>* und *sum tacn*; hence, the intensional interpretation of ‘ælc unðeaw’ does not come about via narrow scope relative to the modal. This excludes an interpretation as a plain universal quantifier. (115) is not an NPI licensing context either. The remaining possibility is that (115) is an example of an FCI use of *ælc*.

Similarly, in (116) no slave need actually have been given anything by any man. In (114), a plausible paraphrase has the universal quantifier over ‘lands’ take wide scope over ‘they would be handiest’ and range over possible enemies.

I argue that these data make transparent the intuition that the indeterminate pronouns in question are FCIs, by virtue of the intensional meaning component in FCIs that is not present in plain universal quantifiers.

I add a theoretical consideration: OE indeterminates represent a stage in a diachronic development from indeterminate pronoun to universal quantifier; that is, OE *hwelc* ‘which’ is, as far as we can determine, at the etymological origin of PDE *each* and *every*. Haspelmath (1995) argues convincingly, and I follow him in Beck (2017, 2018), that this development proceeds via FCR and FCI (see Sect. 4.3. below). Since at the stage we are looking at, OE bare indeterminate pronouns still have interrogative and FCR uses, and already have universal uses, it would be odd to think that they have lost the FCI reading, an intermediary interpretation on this trajectory. This also speaks in favour of an FCI analysis being available.

### 3.6 Summary of Sect. 3

The analysis developed in this section accounts for the pattern summarized in (39’).

(39’)	question	FCR	FCI	NPI	Univ	Exist
bare series	✓	✓	✓		✓	✓
<i>ge</i> -series			✓	✓	✓	✓
<i>a</i> -series			✓	✓	✓	

To recapitulate, all types of OE indeterminate phrases give rise to several sentence interpretations. This informs an analysis according to which the semantics of the indeterminate phrase is separated from the semantics of a covert sentence level operator. Due to the nature of the sentence interpretations available (in particular question, FCR, FCI, NPI), the contribution of the indeterminate phrase is a set of alternatives. In the manner familiar to us from other empirical domains and their analyses, the alternative semantics projects compositionally just like the ordinary semantics of an expression. The resulting propositional alternatives are evaluated by the appropriate operator: Q for questions and in FCR, All-Alt for FCI, EXH for NPI, ALL for universal, and EXIST for existential interpretations.

The obvious question is which indeterminate pronouns can associate with which operator. I have argued for the options for OP in (118) which derive (39’).<sup>11</sup>

(50) [OP [... indeterminate pronoun...]]

- (118) a. bare series: Q, ALL, EXIST, All-Alt  
 b. *ge*-series: ALL, EXIST, All-Alt, EXH  
 c. *a*-series: ALL, All-Alt, EXH

<sup>11</sup> The bigger picture should contain further alternative evaluating operators like the  $\sim$  for focus evaluation, and perhaps others (e.g., ScalarAssert or covert *even* (Krifka 1995; Lahiri 1998; Chierchia 2013) for evaluation of strong NPIs). The  $\sim$  cannot evaluate OE indeterminate pronouns, for semantic reasons—see the discussion in Sect. 3.3.3. I am not at present aware of OE data that would make particular more fine-grained constraints on evaluating operators necessary. See Chierchia (2013) and Beck (2016) for general discussion of additional syntactic mechanisms that can constrain alternative trigger/evaluating operator pairings, where required.

An interesting aspect of the analysis is the role attributed to the morphemes *ge-* and *a-*. Both reduce the available interpretations of indeterminate phrases, *ge-* removing question and FCR interpretations, and *a-* additionally removing existential readings. This has been interpreted as *ge-* mediating between alternative and ordinary semantic values, making the indeterminate phrase unable to act as interrogative (and therefore also unable to occur in FCR). This means that *ge-*pronouns cannot associate with Q, but in contrast to bare indeterminate pronouns, they can associate with EXH. The morpheme *a-* is transparently universal and removes non-universal interpretations from the range of possibilities. Therefore *a-*pronouns cannot associate with EXIST. Both morphemes find theoretical predecessors in the semantic and syntactic literature.

Two properties of the analysis emerge directly which are of more general interest: (i) The connection between interrogative and FCR uses that OE exhibits supports analyses of FCR as underlyingly interrogative (Hirsch 2016). (ii) It is possible to bring together two strands of research working with alternatives: questions and NPIs, unifying Hamblin alternatives and NPI alternatives. This confirms Erlewine and Kotek's (2016) result (which is based on Tibetan data and a slightly different analysis of NPIs). In view of the fact that crosslinguistically, the make-up of NPIs frequently derives from indeterminate or interrogative expressions (e.g. Haspelmath 1997; Kratzer and Shimoyama 2002), this unification is highly desirable.

## 4 Consequences and outlook

In this final section, I consider the findings from OE under a wider perspective. In Sect. 4.1 I relate OE to indeterminate phrases in other languages. Universal quantification is discussed from a crosslinguistic perspective in Sect. 4.2 and from a diachronic perspective in Sect. 4.3.

### 4.1 Indeterminate phrases crosslinguistically

In recent years, the field has collected substantial evidence on indeterminate phrases in semantically underdescribed languages. We have begun to develop generalizations across languages and an analysis of those generalizations. I take Szabolcsi (2015) to be a culmination of a lot of interesting work in this area. OE indeterminate phrases offer an illuminating case study because there are two respects in which they do not match the generalizations reached on the basis of other languages, the properties (119(i)) and (119(ii)):

- (119) (i) **Universal bare indeterminates:**  
OE bare indeterminate phrases permit a universal interpretation.
- (ii) **Existential/universal ambiguity:**  
The OE *ge-*series, despite the additive nature of *ge*, permits an existential interpretation in addition to a universal interpretation.





The semantic connection of *ge-* to so-called question particles or Q-particles (e.g., Hagstrom 1998; Shimoyama 2001, 2006; Cable 2010; Slade 2011; Uegaki 2018) is less close than to *manang*. The term is applied to morphemes that may mark questions (*wh* and alternative), indefinites and NPIs, and disjunctions. (The details of the distribution and interpretive options vary from particle to particle.) (122) illustrates with Japanese *-ka* (examples after Uegaki 2018), a Q-particle, or (in Szabolcsi's (2015) terms) quantificational particle of the KA-type.

- (122) a. Dare-ga hashitta-KA oshiete.  
           who-Nom ran-KA tell  
           'Tell me who ran.'  
       b. Dare-KA-ga hashitta.  
           who-KA-Nom ran  
           'Someone ran.'  
       c. Hanako-KA Jiro-KA-ga hashitta.  
           Hanako-KA Jiro-KA-Nom ran  
           'Either Hanako or Jiro ran.'

Q-particles also require a navigation of the two tiers of semantic interpretation (alternative and ordinary semantics). That is, somewhere in the interpretation we need to get from Hamblin alternatives to ordinary semantic values, and where and how this happens depends on the construction we analyse (question vs. NPI etc.) (e.g., Uegaki 2018; Kotek 2019). The range of interpretations considered in the Q-particle literature cited above is, however, different from the range of interpretations we find for OE indeterminate phrases. In particular, Japanese *-ka* and its crosslinguistic counterparts do not mark universal quantification, while this is a possible interpretation of the *ge*-series. Accordingly, the semantic analyses developed for Q-particles do not apply to OE indeterminate pronouns. For example, the difference between interrogative and non-interrogative interpretations in OE does not lie in the application of existential closure (e.g., Uegaki 2018), which determines an existential interpretation.

Instead, the semantics of *ge-* can go into both a universal and an existential interpretation. This morpheme is another piece of the puzzle in the derivation of non-interrogative readings of indeterminate phrases. I conjecture that the operator personified by *ge-* may play a role in the semantic decomposition of Q-particle constructions, as demonstrated in Erlewine (2017) for *manang*, perhaps more generally.

## 4.2 Universal quantification across languages

The composition of universal quantification that we have seen in OE is markedly different from how quantification works in PDE. Below, I contrast a minimal pair. The contrast invites examining the analysis of OE in the light of crosslinguistic variation in the domain of quantification.



propositions, as in (124) above, or over alternative individuals, as in the alternative analysis in (127), which mirrors (126).<sup>12</sup>

- (127) a.  $[[_{\text{DP}} \text{ALL } [_{\text{DP}} \text{ÆLC } \text{dæge}]] \text{ hæfde ambyrne wind}]$   
 b. If  $Z = [\text{ALL } \text{XP}]$  then  $[[Z]]_o = \lambda Q. \forall x[x \in [[\text{XP}]]_{\text{Alt}} \rightarrow Q(x)]$   
 c.  $[[[\text{ALL } [_{\text{ÆLC}} \text{dæge}]]]]_o = \lambda Q. \forall x[x \in \{\text{day}_1, \text{day}_2, \dots, \text{day}_n\} \rightarrow Q(x)]$

Since with All-Alt and EXH, indeterminate phrases in OE are evaluated by operators that certainly are propositional (we know this because these two operators take scope over the licenser, a modal or negation), it seems more parsimonious to define a propositional ALL (in the footsteps of Kratzer and Shimoyama 2002). If this is accurate, then OE contributes a slightly different pattern from Japanese in the domain of quantification crosslinguistically. The next subsection offers a diachronic perspective on this issue.

### 4.3 Diachronic development of universal quantifiers

OE *ælc*, via Middle English (ME) *elk*, *elc*, *ylc*, ..., *ech* is the word from which (perhaps together with *æghwælc*) PDE *each* developed (e.g., Einkenkel 1904; Kahlas-Tarkka 1987; Haspelmath 1995). PDE *every*'s source is the combination *æfre ælc* 'ever each' which became frequent during ME. Looking back at the two analyses in (123) and (124), it is clear that the semantic change involved is far from trivial. How did PDE *each* and *every* derive from *ælc*?

In Beck (2017, 2018) I propose that there is a universal semantic cycle, in analogy to Jespersen's (1917) cycle for negation. Following Beck (2017, 2018), (128) sketches the major stages in the cycle.

#### (128) Universal Semantic Cycle:

**stage 1:** Covert universal quantification over alternative propositions

*Example* FCR unconditional:

*Whoever Ellen supervises, she needs a bigger office.*  
 $\forall p[p \in \{\lambda w. \text{Ellen supervises } x \text{ in } w | x \in D \ \& \ \text{person}(x)\}]$   
 $\rightarrow$  if  $p$ , then Ellen needs a bigger office]

**stage 2:** Universal quantification over individual alternatives

*Example* wh-ever FCI:

*Ellen will supervise whoever.*  
 $\forall z[z \in \{x: x \in D \ \& \ \text{person}(x)\}] \rightarrow \text{Ellen will supervise } z]$

**stage 3:** Lexical universal quantification over individuals by universal DP

*Example* Generalized Quantifier DP:

*Ellen will supervise everyone.*  
 $\forall x[\text{person}(x) \rightarrow \text{Ellen will supervise } x]$

<sup>12</sup> Note that an existential PSP for the *ge-* and the *a-*series is easily defined under the analysis in (127); cf. the issue raised in Footnote 9. In (i) below, only the restrictor is presupposed, not the nuclear scope. This may be more appropriate, but again is hard to check for OE.

(i) If  $Z = [\text{ALL } \text{XP}]$  then  $[[Z]]_o$  is only defined if  $[[\text{XP}]]_o(\lambda y. y = y) = 1$ .  
 If defined, then  $[[Z]]_o = \lambda Q. \forall x[x \in [[\text{XP}]]_{\text{Alt}} \rightarrow Q(x)]$

**stage 4:** Group denoting DP with possible universal distributive readings

*Example* collective universal pronoun:

*Everyone (gathered in the hallway and) shouted 'PIZZA'.*

$\max(\lambda x. *person(x)) \in [\lambda z. \forall x[x \leq z \rightarrow x \text{ shouted 'PIZZA'}]]$

Haspelmath (1995) argues that a common source of universal quantifiers across languages is free relative clauses, which develop into FCI. I spell this out in terms of formal semantics as stage 1: universal quantification over propositions, as we see it, for example, in FCRs. At stage 2, the structure and compositional environment is reduced. Quantification is still over alternatives, but individual alternatives, and the universal quantification may become associated with a morpheme. Japanese *-mo* is a crosslinguistic example of stage 2 (English *wh-ever* DP is provided merely for illustration). Stage 3 is the stage we are familiar with from the analysis of quantification in formal semantics (e.g., Barwise and Cooper 1981): a generalized quantifier analysis. Quantification happens in the ordinary semantics. In a final stage, I suggest that an element may leave the cycle and lose its property of being a universal quantifier. We are beginning to see this with collective readings of PDE *every* (Champollion 2010; Beck 2018).

The diachronic development is parallel to what we see in Jespersen's cycle: In a first stage, there is an element which does not itself express a logical concept, but occurs in environments in which the concept is expressed (e.g., emphatic particles like French *pas* 'step' supporting negation). In a next stage, the element becomes tied to the logical concept but does not express it alone (e.g., the combination *ne... pas*). At a central stage, this lexical item expresses the logical concept (present day French *pas*). But the item may lose this semantics (which is what happened to French *ne*), making room for the cycle—or more accurately spiral (Gergel 2016)—to begin anew.

The logical concept in the present example is universal quantification in the place of negation. The division of labour that is negotiated is between indeterminate phrases, covert universal quantifiers, and lexical universal quantification, instead of NPIs, negative concord, and lexical negation in Jespersen's cycle. (Similar concepts plausibly apply to the diachronic development of various indefinite expressions, but I concentrate on universals here.)

We can now look at the analysis in Sect. 3 as a window into the Universal Semantic Cycle. The analysis of universal readings of OE indeterminate phrases is located in between stages 1 and 2 of the cycle. This is because quantification is still over propositions, but the structure is reduced and we no longer have the conditional and other material from the FCR. The question raised at the end of the preceding subsection, whether quantification could be over individual alternatives instead of propositions, directly relates to the further diachronic development. I conjecture that at some point covert ALL must adjoin to DP and quantify over individuals, as in (127), since this is the stage 2 analysis that will allow us to eventually move on to stage 3 (the standard analysis in terms of generalized quantifier theory). I do not at this point have evidence to decide at what time English is to be analysed as stage 2, that is, whether the DP ALL analysis in (127) applies already in OE or only later, presumably in ME.

At any rate, from the stage 2 analysis, the following change has to occur to get us to stage 3:

(129) **Change from stage 2 to stage 3:**

[[ALL + [which P]] Q]	[[which P]] = {x: P(x)}
↓	- wh-expression loses its status as an alternative trigger, {x: P(x)} ==> λx.P(x)
	- universal quantification switches from alternatives to the ordinary semantics
	- covert ALL is not postulated.
[[every P] Q]	[[every]] = λP.λQ.∀x[P(x) → Q(x)]

That is, we move from an alternative semantics to an ordinary semantics, and the determiner takes on the meaning of the universal quantifier while covert ALL is lost. These things have to happen all together to change the composition as indicated. I analyse this change in detail in Beck (2018).

The sketch presented here suffices for us to see how the analysis of indeterminate phrases in OE fits into a bigger picture of crosslinguistic variation and diachronic development of universal quantification. It is interesting to see how an English generalized quantifier, the standard example of quantification in natural language, developed diachronically—from a very different origin.

## 5 Summary and conclusion

This paper has offered an investigation into the interpretive possibilities of indeterminate pronouns in Old English. I have presented a sample of positive evidence extracted by searching the YCOE corpora. The data indicate a surprisingly massive ambiguity of sentences with indeterminate pronouns. The bare series is shown to allow interrogative, existential, universal, and free choice interpretations. The universal interpretation of bare indeterminates is a novel phenomenon crosslinguistically. Evidence is presented that the *ge*-series can participate in universal, existential, free choice, and NPI interpretations. The simultaneous availability of both an existential and universal interpretation is again unexpected crosslinguistically. The *a*-series, finally, participates in universal, free choice, and NPI readings.

The analysis puts a Hamblin alternative semantics at the heart of the composition. This is the contribution of the indeterminate pronoun. Covert alternative evaluating operators determine sentence interpretation on the basis of the alternatives triggered by the indeterminate. Each series permits several evaluating operators, but not the same ones. The morphemes *ge*- and *a*- are semantically active, affecting which evaluating operators are appropriate. This system derives the range of available readings for each series.

In addition to providing a case study of the expression of quantification crosslinguistically, Old English indeterminate pronouns invite a diachronic perspective. Focusing on *a<sub>lc</sub>*, the ancestor of *each*, the study opens a window to the historical development of universal quantification. From an alternative semantics, the expression changes to a standard universal quantifier. This necessitates a series of changes in the grammar that the present paper has begun to explore. Further steps would be to pursue a more fine-grained study of other interpretations and of the different periods of the English language, and to consider

the diachronic trajectory of other indeterminate pronouns. I must leave these follow-up questions as projects for future research.

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## Appendix: data collection from YCOE

My YCOE data sample as presented in this paper consists of occurrences of indeterminate pronouns that occur in the YCOE files listed below (in alphabetical order). The data were collected by running queries in the program CorpusSearch (see Taylor et al. 2003) for the various morphological forms and spellings of the indeterminate pronouns *hwa*, *hwelc*, *hwæðer*, *gehwa*, *gehwelc*, *gehwæðer*, *æghwa*, *æghwelc*, *æghwæðer* and *ælc* (supplemented by individual other examples, e.g., with *hwær*, *gehwær*). The first column in the table provides the YCOE file name, followed by the period information given in YCOE and the name of the text. The fourth column specifies the edition that the YCOE file is based on.

cobede	OE2	Bede's History of the English Church	Miller (1959–1963)
coboeth	OE2	Boethius, Consolation of Philosophy	Sedgefield (1899)
codocu1	OE1	Charters and Wills	Harmer (1914) Robertson (1956)
codocu2	OE2	Charters and Wills	Harmer (1914) Robertson (1956)
cocura	OE2	Cura Pastoralis	Sweet (1958)
cocuraC	OE2	(replaces defective section)	Sweet (1958)
colaece	OE2	Bald's Leechbook	Cockayne (1864–1866)
colawaf	OE2	Laws of Alfred	Liebermann (1903–1916)
colawafint	OE2	Alfred's Introduction to Laws	Liebermann (1903–1916)
colawine	OEx2	Laws of Ine	Liebermann (1903–1916)
coorosiu	OE2	Orosius	Bately (1980)
coprefcura	OE2	Preface to the Cura Pastoralis	Sweet (1958)

The data collection reported here concentrates on the YCOE files identified as OE1 or OE2. In case the indeterminate pronoun under investigation is rare (as is the case in particular for the *ge*-series), I supplement the OE1 and OE2 files with files that identify the text as OE1 or OE2, though the manuscript source is later. This is the case for the Blickling Homilies described as OE23 (meaning the text is from OE2 but the manuscript from OE3) and Gregory's Dialogues, OE24 or OE23.

coblick	OE23	The Blickling Homilies	Morris (1967)
cogregdC	OE24	Gregory's Dialogues	Hecht (1965)
cogregdH	OE23	Gregory's Dialogues	Hecht (1965)

Mentioned in the discussion (in particular in the context of the global searches of YCOE) are additional data points collected from the following files:

cocathom1	OE3	Alfric's Catholic Homilies I	Clemoes (1997)
cocathom2	OE3	Alfric's Catholic Homilies II	Godden (1979)

Some editions (e.g., Miller, Harmer and Sweet) include a translation of the OE text into modern English. This is generally the translation I cite. Liebermann (1903) includes a translation of the OE text into German, which I provide along with my translation into English. The edition of e.g. Sedgefield does not include translations into modern English. Here, Alfred the Great's electronic Boethius (under [www.uky.edu](http://www.uky.edu)), which is based on YCOE's source Sedgefield (1899), was helpful. In some cases (e.g., Bately's (1980) edition of Orosius), I did not have access to the YCOE source edition. In such cases, the sources of the translations are as indicated in the individual examples.

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