Tom Bossuyt, Ludovic De Cuypere, Torsten Leuschner

Emergence Phenomena in German *W-immer/auch*-Subordinators

Abstract The present study is concerned with the distributional patterns of the irrelevance particles *immer* 'ever' and *auch* 'also' in German universal concessive conditionals and free relatives (e.g. *was immer er auch sagt* 'whatever he says'). Whereas irrelevance is conveyed by a single element in a fixed position in languages like English *(-ever)*, *immer* and *auch* occur in multiple positions and combinations. Following the example of Leuschner (2000), the distribution of particles and their combinations is documented and explained using functional motivations. Compared with Leuschner (2000), however, the present study is based on a much larger sample of 23,299 clauses with the *W*-words *was* and *wer* (incl. their inflected forms) from the *DeReKo*-corpus, allowing for a far more detailed statistical analysis. Special attention is devoted to the distribution of *immer* and *auch* (including their combinations) in full subordinate clauses vs. elliptically reduced forms, and to the nature of the resulting patterns as a case of emergent grammar.

Keywords Concessive conditionals; irrelevance; particles; subordinators; emergent grammar; corpus study

1   Introduction

Following König (1986), it has become customary to analyse adverbial subclauses like those in (1a.–c.) as different subtypes of *concessive conditionals*:

(1)   a.   Universal concessive conditional
           However much financial support we get, we will go ahead
           with our project.
      b.   Alternative concessive conditional
           Whether we get financial support or not, we will go ahead
           with our project.

c. Scalar concessive conditional
   Even if we do not get financial support, we will go ahead
   with our project.
   (cf. Haspelmath/König 1998:563)

The term "concessive conditional" (henceforth: CC) has been adopted by other researchers (e.g. Breindl 2014) and even found its way into some reference works (e.g. Zifonun et al. 1997). Despite their heterogeneous form in some languages (including English and its relatives, Haspelmath/König 1998), all CCs express the same basic conditional meaning (cf. König 1986, Leuschner 2006, d'Avis 2016):

(2) a. if $\{p_1$ or p_2 or p_3 or ...$\}$, then q
     b. if p_n, then normally not q

Instead of just one antecedent value (if p then q), the various subtypes use different strategies to invoke a multiplicity of antecedent values (if p_x then q), whose individual truth values are irrelevant to the truth value of the consequent q in the apodosis. The values form a set which is partially ordered along some relevant parameter (i.e. a partially ordered set or 'poset', cf. Neggers/Kim 1998), hence the protasis typically contains a contextually extreme antecedent condition p_n, under which q would not normally be expected to be true, as suggested by (2b.) (König 1986:234). For example, the subclauses in (1a.-c.) all invoke a set of values along the parameter 'amount of funding obtained'. (1a.) does so by means of a *WH-ever*-type quantificational expression, (1b.) by means of a disjunction naming the two endpoints of the scale, and (1c.) by marking one of the endpoints (failure to obtain funding) as a particularly informative value by means of the scalar focus particle *even*. As projects are normally cancelled in the absence of funding, all three subtypes assert with particular force the continuation of the project regardless of financial circumstances.

This paper is concerned with the first of the three subtypes (henceforth: UCCs) in German. While introducing the label *universal concessive conditional*, König/Eisenberg (1984) admitted that the relevant quantificational strategy is in fact quite different from standard universal quantification (König/Eisenberg 1984: 315). Instead, UCCs "signal a free choice in the selection of values for a variable in the protasis" (König 1986: 231) and are therefore more reminiscent of *any* than of *every* or *all*.

In English UCCs, free-choice quantification is invariably marked by a standard item, viz. *-ever*, in a fixed position, viz. attached to the *WH*-word.[1] German,

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1 An exception is *WH-so-ever* (e.g. *whatsoever*), which will be briefly discussed below.

by contrast, has two corresponding items, viz. *immer* 'ever'² and *auch* 'also'. As far as their use as free-choice markers in UCCs and related constructions (cf. below) is concerned, *-ever*, *immer* and *auch* will henceforth be referred to as *irrelevance particles* (cf. Leuschner 2000: 344). Whereas *-ever* as irrelevance particle fails to show any positional variability across the clause, *immer* and *auch* may occur in different positions, either alone or combined, as shown in (3):³

(3)　a.　*Was immer* er sagt, keiner hört ihm zu.
　　　b.　*Was* er *auch* sagt, keiner hört ihm zu.
　　　c.　*Was immer* er *auch* sagt, keiner hört ihm zu.
　　　d.　*Was immer auch* er sagt, keiner hört ihm zu.
　　　e.　*Was auch immer* er sagt, keiner hört ihm zu.
　　　f.　*Was* er *auch immer* sagt, keiner hört ihm zu.
　　　　　'Whatever he says, nobody listens to him.'

Furthermore, *immer*, with or without *auch*, is attested marginally after pronominal subjects (cf. below for figures), while *auch* is sometimes placed in front of lexical subjects:

(4)　a.　*Was* er *immer* sagt, keiner hört ihm zu.
　　　b.　*Was* er *immer auch* sagt, keiner hört ihm zu.
　　　c.　*Was auch* der alte Mann sagt, keiner hört ihm zu.
　　　　　'Whatever he/the old man says, nobody listens to him.'

For decades, descriptive grammars of German have tended to overlook and/or simplify these positional and combinatorial patterns. Most suggest vaguely that either *immer* or *auch* is obligatory, while the other can be omitted (cf. Bossuyt 2016: 49f. for a more detailed survey). In response to this situation, which remains essentially unchanged today, Leuschner (2000) first investigated the patterns and frequencies of *immer/auch* in UCCs in 104 examples gleaned from the *Mannheimer Korpus* (ca. 2.2 million tokens in total). His main conclusions were

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2　German *immer* is a partial cognate of English *ever* through the initial *i-* (Middle High German *ie* in *ie-mêr*, cf. Modern High German *je* 'ever'), which is cognate with the initial *e-* of *ever* (Old English *æ-fre*, Leuschner 1996). *Immer* had free-choice 'ever' as one of its standard temporal readings in earlier German (ibd.) and continues to retain a non-universal, *ever*-like reading in combination with adjectives even today, as e.g. in *immer größer* 'ever greater'. The free-choice meaning of *immer* goes back historically to the temporal 'ever'-reading, but like *-ever*, *immer* has lost all temporal force in UCCs (Leuschner 1996: 481).

3　All *W*-words (e.g. *was*) and irrelevance particles in example sentences are italicised.

(i)   that *immer* and *auch* show complementary positional tendencies: *immer* is invariably adjacent to the clause-initial *W*-word, while *auch* tends strongly (though not necessarily) to occur towards the clause-final verb phrase;

(ii) that *immer* and *auch*, when used in the same clause and in this order, retain their individual positional preferences, hence the subject – and possibly some other constituent – may be placed in between *immer* and *auch*, as in (3c.), creating an *immer* (...) *auch* pattern;

(iii) that the combination of *auch* with *immer*, in this order, does not allow other elements in the clause to intervene and that this pattern, represented simply as *auch immer*, also shows a "preference for shorter and elliptically reduced subclauses" (Leuschner 2000: 353).

Compared with the *Mannheimer Korpus* (which dates from the 1960s), corpus sizes have increased vastly in recent years, creating unprecedented opportunities for analysis. A prominent example is the *Mannheimer Korpus* itself, which has since been included in the much larger *Deutsches Referenzkorpus* (*DeReKo*; Kupietz et al. 2010, Kupietz/Lüngen 2014). On the quantitative side, our paper draws on the *DeReKo* in a partial replication of Leuschner's (2000) study, using a much-expanded sample (with some inevitable restrictions of its own) and a more sophisticated statistical methodology. On the qualitative side, we develop for the first time the hypothesis that the positional and distributional patterns of *immer* and *auch* represent a snapshot of the long-term emergence of irrelevance marking as a subsystem of modern German. German combinations of clause-initial *W*-words with *immer* and/or *auch*, we argue, form a long-term building-site of grammaticalisation ("Grammatikalisierungsbaustelle", Leuschner 2006, cf. Nübling 2005) whose completion will remain uncertain until *immer* is finally reanalysed as part of the *W*-phrase and univerbated with the *W*-word. While this happened to the English *-ever* several centuries ago (Leuschner 2006:135f.), such a step continues to look unlikely in German for the foreseeable future.

2   Methodology

DeReKo, the corpus used for the present study, is the main reference corpus for modern German, containing ca. 42 billion words of running text as of February 3, 2018.[4] Based on a broad sample of written genres, including fiction, most texts are from printed news media; Wikipedia articles and discussions have recently been included, as have parliamentary minutes (Kupierz/Lüngen 2014, cf. Scherer 2014:83). As in Leuschner (2000), the search was targeted at *W*-words followed by

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4   http://www1.ids-mannheim.de/kl/projekte/korpora/, last accessed February 25, 2018.

immer and/or *auch*, but unlike Leuschner (2000), who searched for all *W*-words, including *wann* 'when', *wo* 'where' etc., we restricted our query, for practical reasons, to *was* 'what' and the paradigm of *wer* 'who' (i.e. nominative *wer*, genitive *wessen*, dative *wem* and accusative *wen*; cf. Thieroff 2011). Before the search, decisions had to be taken on the distance operators in the search queries, i.e., the distance in number of words between *was* or *wer* (incl. inflectional forms) and *immer/auch*. Taking into account Leuschner's (2000) conclusions on the positional tendencies of *immer* and *auch*, only instances of *immer* immediately following the *W*-word were included (i.e. the distance operator was set to 1), whereas a distance operator of 4 words was applied with *auch*.[5] A total of 48,464 tokens were then exported from *DeReKo* on December 23rd, 2015. A preliminary analysis of *was*, which alone yielded 8,734 tokens, can be found in Bossuyt (2016) and has been incorporated into the results below. 5,268 additional tokens were exported on November 11th, 2016, with *immer* immediately preceded by a 3rd person singular pronoun which was in turn preceded immediately by the *W*-word (e.g. *was es immer*),[6] bringing the total of exported tokens to 53,732. All tokens were analysed manually to check whether *immer* and *auch* did indeed function as irrelevance particles – after all, *immer* can be a temporal adverb and *auch* can be an additive focus particle – and to remove doubles containing the particles in combination. This brought the final sample to 23,299 tokens.

Not all these tokens represent prototypical UCCs like those mentioned above. Some are non-specific free relatives (henceforth: NFRs) as in (5):

(5)   *Wer immer* sich angesprochen fühlt, ist dazu eingeladen. (A99/FEB.12351)
      'Whoever feels addressed, is invited.'

Whereas the protasis in UCCs functions as a loose adjunct of the apodosis, NFRs typically function as embedded arguments in the matrix clause (Leuschner 2005), e.g. as its subject in (5). However, the distinction between UCCs and NFRs is not clear-cut (cf. Leuschner 2005:59–62), and since both types constitute genuine subclauses with a clause-initial *W*-word followed by one or more irrelevance particles, we will jointly designate all *W immer/auch*-constructions which

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5   A distance operator of 3 was selected for *wessen* (…) *immer* because this *W*-word can modify NPs. For *W* (…) *auch*, a distance operator of 4 seemed to be the most practical solution: clauses with subjects consisting of a determiner, adjective and noun could still be found, without the distance between the *W*-word and *auch* being too large, causing an undesirably large number of invalid instances to be found, e.g. where *auch* occurs in the apodosis or in the next sentence.

6   We are grateful to Dr. Eric Fuß (IDS Mannheim) for suggesting this strategy. Although the search yielded only a small number of new tokens with *immer* as irrelevance particle, our database did become more comprehensive as a result.

function as subclauses as *primary constructions* (as opposed to secondary constructions, cf. below).

Primary constructions are analysed using Leuschner's (2000) version of the Topological Field Model for German clause structure (cf. Wöllstein 2014) as can be seen in Table 1a.

Table 1a: Leuschner's (2000:345) version of the Topological Field Model, exemplified by (4c).

pre-field	left bracket	middle field			right bracket	post-field
W	–	II	S	IV	V	–
was	–	*immer*	er	*auch*	sagt	–

While the *W*-word occupies the pre-field, leaving the left bracket unoccupied in Standard German (Wöllstein 2014: 32–37), the middle field is divided into a field for the subject of the subclause (S) and two fields which may be occupied by irrelevance particles: field II to the left of S and field IV to the right of S (Leuschner 2000:345). As usual in German subclauses, the VP occupies the right bracket (V), followed by the post-field, which is empty as a default.

The topological model in Table 1a only makes sense if the *W*-word is not the subject of the subclause. When the *W*-word is the subject, there is no need to split up the middle field, and the latter is then simply called II/IV (Leuschner 2000: 346) as can be seen in Table 1b:

Table 1b: Leuschner's (2000: 346) version of the Topological Field Model, exemplified by (5).

pre-field	left bracket	middle field	right bracket	post-field
W	–	II/IV	V	–
wer	–	*immer* sich	angesprochen fühlt	–

While these two models fit nearly four fifths of all tokens, 4,926 (21.14 %) do not fit either model. The reason is that they are derived historically from primary constructions by ellipsis and reduced to a *W*-word + irrelevance particle(s) combination (cf. Breindl 2014: 980f., Leuschner 2013: 57, Waßner 2006: 386f.). We label them *secondary constructions*. They may function as:

(6)   indefinite pronouns (cf. Haspelmath 1997: 139, 160f.):
       Ein Appell an *wen auch immer*, der sich verantwortlich fühlt.
       (U08/JUL.03097)
       'A call to anyone (lit. whoever) who feels responsible.'

(7)   discourse markers (more usually *wie auch immer* 'however', Leuschner
      2000: 352):
      Doch *was auch immer*: Ein Crash ist trotzdem jederzeit möglich.
      (SOZ06/OKT.04291)
      'But whatever: a crash is nevertheless a possibility at all times.'

(8)   "general extenders" (Overstreet 1999):
      Ich bete mit Ihnen zu Gott – oder zur Göttin oder *wem auch immer*
      (PBE/W15.00007)
      'I pray with you to God – or to the Goddess or whoever.'

Since irrelevance particles show a strikingly different distributional behaviour
in primary and secondary constructions, we distinguish between primary and
secondary constructions in the sections which follow. Section 3 presents our
results, first regarding the former (3.1), then the latter (3.2). After sketching the
diachronic emergence of the particles' positional tendencies (section 4.1), we
then similarly analyse our results first with respect to primary constructions
(sections 4.2–5.1), then to secondary constructions (section 5.2), before turning
to the conclusion (section 6).

3   Basic distributional patterns

3.1 Primary constructions

Table 2a presents the distribution of irrelevance particles in primary construc-
tions in which the *W*-word is not the subject of the subclause.[7] An example from
the corpus for each type is given in (9).

(9)   a.   *Was auch* die Gründe sein mögen, nur jammern [...] hilft auch
           nicht weiter. (A01/OKT.32079)
           'Whatever the reasons may be, just complaining won't help either.'
      b.   *Wen auch immer* man fragt: Esel finden alle irgendwie klasse.
           (U06/JUN.00549)
           'Whoever you ask: everyone thinks donkeys are great somehow.'
      c.   *Wer immer auch* die Täter sind, [...], sie müssen sich vorsehen.
           (SOZ10/APR.03622)
           'Whoever the perpetrators are, they have to watch out.'

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7   Note that the left bracket and the post-field are omitted from this and the following
    tables, as they are irrelevant to the particles' distribution.

Table 2a: Distribution of irrelevance particles in subclauses where W ≠ S.

	W	II	S	IV	V	#	%
(a)	W	*auch*	S	–	V	22	0.24 %
(b)	W	*auch immer*	S	–	V	954	10.53 %
(c)	W	*immer auch*	S	–	V	149	1.64 %
(d)	W	*immer*	S	–	V	6,075	67.05 %
(e)	W	*immer*	S	*auch*	V	1,005	11.09 %
(f)	W	–	S	*auch*	V	647	7.14 %
(g)	W	–	S	*auch immer*	V	154	1.70 %
(h)	W	–	S	*immer auch*	V	15	0.17 %
(i)	W	–	S	*immer*	V	39	0.43 %
						9,060	100.00 %

d. *Was immer* sie tun, Maitressen haben einen schlechten Ruf.
   (U14/APR.01817)
   'Whatever they do, mistresses have a bad reputation.'
e. Doch *was immer* er *auch* tut, es reicht nicht. (T13/NOV.02370)
   'But whatever he does, it is not enough.'
f. Mit *wem* ich *auch* rede, überall höre ich dasselbe. (PBE/W14.00030)
   'Whoever I talk to, I hear the same everywhere.'
g. *Wessen* Socke das *auch immer* ist, es wird langsam langweilig.
   (WDD11/P57.49531)
   'Whoever's sock that is, it's beginning to get boring.'
h. Zeitgemäße Dienstvereinbarungen, *was* das *immer auch* heißen möge.
   (PNO/W15.00042)
   'Contemporary service contracts, whatever that may be.'
i. *Wer* es *immer* wissen könnte, M. M. weiß es nicht. (T05/APR.02136)
   'Whoever might know about it, M. M. does not know about it.'

Overall, the preferred position of irrelevance particles is clearly in field II rather than in field IV. 79.47 % of all tokens have (all) their irrelevance particles in this field II (= types a.–d.), only 9.44 % have it/them in field IV (= types f.–i.). The latter is less than the 11 % of tokens which have particles in both II and IV (= type e.); if we add this type to those of the first, the cumulative proportion of particles in field II amounts to 90.56 % of all tokens. The language-specific distribution of particles in German thus mirrors the overall tendency for irrelevance

particles in Standard Average European to immediately follow, or be suffixed to, the w-word[8] (Haspelmath/König 1998: 609). The other option, viz. "clause-internal" placement further to the right, is a minority option cross-linguistically (ibd.), and so it is in German.

Empirically speaking, this distributional pattern is due to the very high proportion of tokens with *immer* (67.05 %), and to a lesser extent *auch immer* (10.53 %), in field II. Other relatively frequent variants are *immer* (…) *auch*, which has *immer* in field II and simultaneously *auch* in field IV (11.09 %), and *auch* alone in field IV (7.14 %). All other variants account for less than 2 % each, or about 4.18 % in total. This distribution deviates somewhat from Leuschner's (2000) findings, the most striking differences being the much higher proportion of *immer* in our data (6,075 out of 9,060 tokens or 67.05 % compared to just 34 out of 92 tokens or 36.96 % in Leuschner 2000: 348) and the much lower proportion of *auch* (647 out of 9,060 tokens or 7.14 % compared to 38 out of 92 tokens or 41.3 % in ibd.). A two-tailed two-proportions Z-test suggests that these deviations are significant ($p < 0.0001$), possibly reflecting differences between the corpora. The results do, however, square with the particle-specific positional tendencies observed by Leuschner (2000): *immer* shows a very strong tendency to occupy field II (6,075 out of 6,114 tokens = 99.36 %), and *auch* has a clear preference for field IV (647/669 = 96.71 %).

Particle combinations have positional tendencies of their own. *Immer* (…) *auch* mostly straddles the subject field (1,005/1,169 = 85.97 %), so that each of its constituent particles occupies its own field of preference (*immer* II, *auch* IV). By contrast, *auch immer* is never broken up by any constituent and shows a strong left-leaning tendency (954/1,108 = 86.1 %). Using the terminology suggested by Thurmair (1989: 290) for combinations of modal particles, *auch immer* therefore qualifies as a "closed" particle combination, i.e. one that behaves like a single, complex particle, and *immer* (…) *auch* as an "open" combination of two individual particles that may or may not be mutually adjacent.

Finally, Table 2b shows the distribution of irrelevance particles in primary constructions in which the *W*-word is the subject of the subclause. An example from the corpus for each type is given in (10).

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8   The term w-word, with w rendered as a non-italicised small capital, is used here as a language-independent designation. Regular, italicised capitals are used for language-specific categories, i.e. *W*-words in German and *WH*-words in English. According to this convention, English *how* is subsumed under *WH*-words despite its spelling; however, *how* does not in fact play a role in the present study.

Table 2b: Distribution of irrelevance particles in subclauses where W = S.

	W	II/IV	V	#	%
(a)	W	*auch*	V	79	0.85 %
(b)	W	*auch immer*	V	1,295	13.91 %
(c)	W	*immer auch*	V	640	6.87 %
(d)	W	*immer*	V	7,299	78.37 %
				9,313	100.00 %

(10) a. Denn *was auch* passiert: Freilichtspiele sind immer ein Erlebnis.
(M01/JUN.44510)
'For whatever happens: open-air theatre is always a great experience.'

b. *Was auch immer* passiert, es muss schnell geschehen. (LTB11/JUN.00726)
'Whatever happens, it has to happen fast.'

c. *Was immer auch* passiert, Gott will, daß wir glücklich sind.
(O95/JAN.07794)
'Whatever happens, God wants us to be happy.'

d. *Was immer* passiert, wir sind bereit zu kämpfen. (A99/FEB.11037)
'Whatever happens, we are prepared to fight.'

Compared with Table 2a, the proportions of *immer* and *auch immer* are significantly higher, while the proportions of *auch* and *immer auch* are significantly lower (both based on a two-tailed two-proportions Z-test, $p < 0.001$).

3.2 Secondary constructions

In secondary constructions, irrelevance particles are distributed very differently compared to primary constructions, as shown by Table 3.

Table 3: Distribution of irrelevance particles in secondary constructions.

	immer	immer auch	auch immer	auch	total
#	399	18	4,485	24	4,926
%	8.10 %	0.37 %	91.05 %	0.49 %	100 %

Whereas *immer* is the most frequent particle in primary constructions, it plays a strikingly minor role in secondary constructions (8.1 %). Instead, *auch immer* is clearly dominant in secondary constructions (91.05 %). *Auch immer* is also the only particle (or particle combination) that prefers secondary constructions, as 4,485 out of 6,888 tokens with *auch immer* (= 65.1 %) occur in secondary constructions. For all other irrelevance particles or particle combinations, by contrast, use in secondary constructions is dispreferred (*immer*: 399/13,812 = 2.89 %; *immer*

auch: 18/1,827 = 0.99 %; *auch*: 24/772 = 3.11 %). This confirms the "preference for shorter and elliptically reduced subclauses", i.e. secondary constructions, found by Leuschner (2000: 353) with *auch immer*.

4 Irrelevance marking as an emergent system

4.1 Historical background

As suggested earlier (cf. chapter 1. *Introduction*), the positional and distributional patterns of *auch* and *immer* and their combinations can be read as a snapshot of the long-term emergence of irrelevance marking in modern German. This process follows historically from the simplification of the *so W so* irrelevance marking construction that Old High German inherited from ancient West Germanic (Leuschner 2006: 134; Lühr 1998). Here are examples of *so W so* in Old High German and of its Old English counterpart, *swa WH swa*:

(11) a. *So wér so* ist fona wáre, ther hórit mir io sáre.
           'Whoever is from the truth, he always obeys me immediately.'
           (cited in Leuschner 2001:16)
      b. *Swa hwylc swa* næfð, þæt he wene þæt he hæbbe, him bið afyrred.
           'Whoever has nothing, what he thinks he has will be taken away
           from him.'
           (cited in ibd.:15)

Given the semantic opacity of so ... so as an irrelevance marking strategy[9] and the fact that both so were unstressed (Lühr 1998), it is no wonder that the simplification of so w so and the replacement of so ... so with semantically more transparent strategies began with the omission of one so (see Leuschner 2001 for a survey of this process in a Germanic-wide context, and 2006: 134–140 for a summary in English). In Old English, it was the left-hand *swa* that was dropped first, and the adverb *æfre* 'ever' already began to be added to support the quantificational effect:

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9   By analogy with the convention established in footnote 8, we use non-italicised, small-capitals so as a language-independent designation which subsumes language-specific *swa* and *so*. By analogy with modern English *how*, *WH*-words include the Old English predecessors of modern *who*, *what* etc. such as *hwa* 'who' despite their spelling.

(12) Luue ðine nexte al swa ðe seluen, *hwat* manne *swa* he *æure* bie!
　　 'Love thy neighbor like thyself, whatever man he be!'
　　 (cited in Leuschner 2006:135)

After it was introduced in what we identified above as field IV, i.e. in the typical position of adverbs, *æfre* was reanalyzed as a quantificational particle and gradually moved left towards the *WH*-word. While the surviving right-hand *swa* (> *so*) could still serve as sole irrelevance particle for several centuries, *æfre* (> ME. *æure* > *ever*) became more and more obligatory; with both *so* and *ever* increasingly cliticised to the *WH*-word, *so* was eventually squeezed out, surviving today almost only in the postnominal Negative Polarity Item *whatsoever* as in *no idea whatsoever* 'no idea at all' (Leuschner 2001:9). In all other cases, *so*-less *WH-ever* is now the only remaining option.

　　 In contrast to English, the corresponding changes in German began with the initial loss of right-hand *so*; left-hand *so* was then weakened to *se* in Middle High German, later cliticised as *s-* to the *W*-word (as e.g. in *swer* 'whoever') and eventually lost altogether, causing the erstwhile *s-W*-words to collapse with the bare *W*-words during the fourteenth century (Leuschner 2006: 135). By this time, *iemer* 'ever' (> *immer*) and *ouch* 'also' (> *auch*) had been introduced as alternative irrelevance markers, along with several other particles which later disappeared again:

(13) a.　er sol swern, dise stat ze behaltene, *swâ* er *iemer* allermeist kan
　　　　 'he shall swear to keep this place wherever he can'
　　　　 (cited in Leuschner 2000: 349)
　　 b.　diu schamt sich des, *swâ iemer* wîbes scham geschiht
　　　　 'she is ashamed of it, wherever dishonour happens to a woman'
　　　　 (cited in Leuschner 2006: 135)
　　 c.　*swaz ouch* mir dâ von geschiht
　　　　 'whatever happens to me as a consequence'
　　　　 (cited in Leuschner 2006: 136)

In contrast to English, where some irrelevance marking was always in place, use of *immer* and/or *auch* was still optional by the early 19th century, as shown by this example by J. W. Goethe (1749–1832):

(14)　*Was* ich thue, *was* ich lasse; / Nur ein unbestimmt Verlangen / Fühl' ich, das die Brust durchglüht.
　　　 'Whatever I do, whatever I do not do; all I feel is an uncertain desire glowing in my breast.'
　　　 (cited in Leuschner 2006:136)

Not until the twentieth century did the presence of at least one irrelevance particle become mandatory, as it is today (d'Avis 2016: 277). Nor did the positional tendencies of *immer* and *auch* become clear until well into the nineteenth century (Leuschner 2006: 136), as again suggested by examples from the works of Goethe, who was still able to position *immer* in field IV:

(15) Und man kommt in's Gered', *wie* man sich *immer* stellt.
    'And one becomes the subject of gossip, however one (lit.: how one ever) positions oneself.'
    (cited in Goethe's *Faust I*, line 3201)

Immer has since replicated the leftward shift of *ever* (cf. above), albeit less consistently (cf. above); it took several centuries longer than *ever* to do so and has so far failed to reach the corresponding conclusion (Leuschner 2006: 136). And of course, the picture is complicated further by the presence of *auch*, which has been undergoing its own (partial) shift in the reverse direction from field II to field IV, and often combines with *immer* in fields II and IV.

4.2 Disambiguation

The emergence of a separate paradigm of *WH-ever* conjunctions in English bears many hallmarks of grammaticalisation (cf. Lehmann 1995) such as semantic bleaching of *ever*, increased condensation through *WH*-adjacency and cliticisation, as well as obligatorification. With this highly advanced process as background, the question arises what, on the one hand, has been driving the corresponding process in German and what, on the other hand, been hindering its completion.[10]

10 An anonymous reviewer suggests that the very presence of irrelevance marking in German is redundant given the characteristic disintegration of the clause complex, as in (3) and (4) above. In this view, the loose adjunction of the (sentence-initial) protasis to an apodosis with separate V2 word order (cf. König/van der Auwera 1988) is characteristic enough to serve as a kind of irrelevance marking in its own right. This would hardly be an effective strategy, however, as the listener would have to wait until the onset of the apodosis in order to identify retrospectively the intended interpretation of the protasis. Syntactic disintegration does not come into play at all when the protasis is non-sentence-initial, and in cases where the protasis functions as an NFR as in example (5) above, or in some intermediate function (Leuschner 2005), it does not offer sufficient clues, either. We therefore continue to believe that irrelevance marking at the level of the subclause is functionally well-motivated in its own right and in no way redundant, as indeed suggested by the systemic dynamism that is the object of our investigation.

According to Leuschner (2000: 347), the above-mentioned positional change of *immer* (and earlier of *ever* in English) towards *W*-adjacency has been motivated by disambiguation. Whereas *immer* unambiguously functions as an irrelevance particle adjacent to the *W*-word, as in (16), it is prone to be mistaken for the temporal adverb *immer* 'always' when placed near the verb, as in (16)'.

(16) *Was immer* die drei Musiker spielen [...] (A97/MAI.01784)
      'whatever the three musicians play'
(16)' *Was* die drei Musiker *immer* spielen [...]
      'what the three musicians always play'

Just as positioning the irrelevance particle *immer* in field II distinguishes it from the temporal adverb, positioning *auch* in field IV helps keep it distinct from its alternative function as the additive focus particle *auch* 'also, even'. *Auch* is more likely to be read as an irrelevance particle when it is close to the verb as in (17), and more likely to be read as an additive focus particle when it is close to the *W*-word as in (17)'.

(17) *Was* die Mexikaner *auch* anpacken [...] (H86/OM3.11688)
      'whatever the Mexicans tackle'
(17)' *Was auch* die Mexikaner anpacken [...]
      'what also/even the Mexicans tackle'

We conclude that the complementary preferences of *immer* and *auch* for fields II and IV, respectively, are brought about by the same functional motivation: disambiguation. With *immer*, disambiguation by adjacency is absolute: if *immer* is adjacent to the *W*-word, it cannot be an adverb and must be read as an irrelevance particle. With *auch*, the disambiguation effect is less inevitable and, in the spoken medium, partly linked to stress: stressed *auch* is more likely to be read as a focus particle than unstressed, regardless of position. In written data like (17) and (17)', whether *auch* is an irrelevance particle or not can only be decided on grounds of context, yet the results are clear, showing irrelevance *auch* being placed overwhelmingly near the verb (cf. Table 2a: 647 times in field IV vs. 22 times in field II).

In view of the clear tendency of *immer* towards *W*-adjacency, it is tempting to conclude that *WH-ever*-like subordinating conjunctions with *immer* (i.e. *werimmer* 'whoever', *wasimmer* 'whatever' etc.) may be formed at some stage in German in the near future. Unfortunately for this prospect, the required univerbation of *immer* with the *W*-word is unlikely to take place any time soon, given that other material may intervene, either optionally or required between any irrelevance particle and the *W*-word. In cases with optional material intervening,

it is in fact extremely rare to find *immer*. Exceptions like (18) require well-targeted search queries to be identified in *DeReKo*.

(18) *Was* <u>aber</u> *immer* sie zur Rechtfertigung ihrer Versäumnisse vorbringt [...]
(P93/FEB.05671)
'But whatever she puts forward as a justification of her failures'

By contrast, *auch* or *auch immer* can occur in this position (i.e. field II, but not immediately adjacent to the *W*-word) without problems, as seen in (19)-(21):

(19) *Was* <u>genau</u> *auch* das Problem sein kann [...] (NUN12/SEP.01641)
'Whatever exactly could be the problem'

(20) *Wem* <u>aber</u> *auch immer* der schwarze Peter nun zufallen wird [...]
(RHZ97/APR.01964)
'But whoever will be responsible/to blame'
(lit.: But whoever the black Pete will be passed to)

Even PPs with full lexical NPs are easily allowed between the *W*-word and the particle, as in (21):

(21) Auf *wen* <u>im kommenden Jahr</u> *auch* die Entscheidung fällt [...]
(RHZ11/JUN.00482)
'Whoever will be chosen in the coming year'
(lit.: Whoever the decision will fall upon in the coming year)

Whereas the intervening material in (19)-(21) is optional, in other cases it is mandatory, as e.g. in combinations of *wie* 'how' + adjective and *welch-* 'which' + NP (Leuschner 2000: 350). While phrases like *however beautiful* and *whichever house* are perfectly grammatical in English, their German equivalents are ungrammatical or at least highly unusual and unattested in our data: *wie* *(immer*) *schön* ?(*immer*), *welches* *(immer*) *Haus* ?(*immer*). When *wessen* 'whose' modifies an intervening NP as in (22a.), combinations with *immer* alone are similarly ruled out, while combinations with *auch immer* are allowed. When *wessen* functions as a genitive object, on the other hand, and no material therefore intervenes between it and the particle as in (22b.), *immer* is unproblematic.

(22) a. mit *wessen* Geld *auch immer* [*immer*] sie bezahlt wurden
(A10/MAR.05697)
'with whoever's money they got payed'

b.　*wessen immer* man mich anklagt (U98/MAR.22976)
　　'Whatever (some)one accuses me of'

Furthermore, Leuschner (2000:350) suggests that *immer* is unable to combine with complex *W*-words like *woher/wohin* 'where from/to', *womit* 'where-with, i.e. with which/what' etc. which are not part of our present sample. These restrictions have so far kept *immer* from attaining full condensation with the *W*-word to a point where it could be reanalysed as part of the W-field and univerbated with the *W*-word. Even worse for this prospect, the preference of *immer* for strict adjacency to the *W*-word has been hindering, not promoting, its obligatorification (cf. ibd.), as its near-exclusion from other positions in field II has been encouraging the use of *auch* or of combinations of *auch* with *immer* rather than *immer* alone.

4.3 The role of the subject

Another significant factor in the emergence of irrelevance marking in primary constructions is the nature of clause-internal subjects. Leuschner (2000: 350) already notes in passing that *auch* seems to occupy its dispreferred field II only if the subject is a lexical NP, never if it is pronominal. Our data confirm this tendency; indeed they show that it is almost exceptionless. Only one counterexample – with *auch* in field II followed by a pronominal rather than lexical subject – is found in the entire sample:

(23) Der Satz mit C. M. – *wer auch* das sein mag – gefällt mir nicht. (WDD11/
　　B18.96254)
　　'The sentence with C. M. – whoever that may be – is not something I like.'

Similarly, in those rare cases where *immer* occupies its strongly dispreferred field IV, the subject is invariably a pronoun, never (in our data) a lexical NP.[11] This helps explain why **W auch S immer V* is the only logically possible distributional pattern that is not attested at all in the sample. Not only would *auch* and *immer* both occupy their dispreferred fields, depending on the type of subject, this structure could also produce counterexamples to the tendency for *immer* to occur only with pronominal subjects in field IV and to the tendency (apparently

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11 The corresponding Middle High German example cited by Leuschner (2000: 349) in (13a.) has *iemer* in field IV following the pronominal subject *er* 'he'. Further study of historical data is required, but so far we are not aware of any instances from any period where *immer* occupies field IV after a lexical subject.

almost exceptionless) for *auch* to co-occur only with lexical subjects in field II. *Immer auch* never occurs after lexical subjects, just like *immer*.

Before we address potential explanations for these tendencies (cf. below), we emphasize again that the nature of the subject correlates significantly with the possibility for single irrelevance particles to occur in their dispreferred fields. Since **W auch S immer V* is effectively ruled out by a conspiracy of preferences determining the positions of individual particles, these particles will invariably be mutually adjacent in either field II or IV whenever they occur together in this order, and this must have been a supporting factor in their reanalysis as a single, complex particle (cf. below). By contrast, when *immer* and *auch* occur together in this order, they tend to be pulled apart by their complementary positional preferences, hence there is far less chance for reanalysis to occur.

Let us take a closer look at factors that motivate the choice between the two particle combinations, taking the perspective of field II as suggested by Table 4a.

Table 4a: Types of subject and open/closed combinations of *immer* (...) *auch* in field II. In an open combination, both fields II and IV are occupied, viz. by either *immer* or *auch*; in a closed combination, both particles occupy field II, while field IV is left empty. Standardized residuals are given in brackets.

	open combination	closed combination	total
lexical subject	170 (-5.7)	131 (14.7)	301
pronominal subject	835 (3.3)	18 (-8.7)	853
Total	1,005	149	1,154

We find a highly significant association between lexical subjects and closed combinations on the one hand, and pronominal subjects and open combinations on the other (χ^2 = 335.65; df = 1; p < 0.0001), with a strong association overall (Cramér's V = 0.5). All standardized residuals deviate significantly from the expected values (a residual larger than $|2|$ indicates a significant deviation from the expected cell proportion), yet the deviations are especially strong in closed combinations. The slightly weaker deviations in open combinations can be explained by the general tendency for *immer* and *auch* to occupy different fields individually (cf. above).

The observed tendency is easily explained. Pronouns in German have a general left-tendency and usually occur in the left periphery of the middle field (i.e. field II), which is known as "Wackernagel's position" (Lenerz 1993: 117f.). In primary constructions, the constituent occupying this position immediately follows the *W*-word or *W*-phrase. The fact that pronouns compete for this position with *immer* (and certain other elements, e.g. the conjunction *aber* in (18) above) is motivated by information structure: pronouns are typically thematic, i.e. they

express discourse-old, given information, and thus typically occur before rhe-
matic, i.e. discourse-new information (Noel Aziz Hanna 2015: 46). However, it is
usually *immer* that gets to occupy this position, since occupying any other posi-
tion would drastically increase the risk of misinterpretation, whereas pronouns
are unproblematic even if they are not the second constituent of the clause (ibid.:
233). Pronominal subjects are thus positively associated with open *immer* (…)
auch because this combination allows both irrelevance particles to occupy their
fields of preference without disturbing the leftward tendency of the pronoun too
much.

   Conversely, the base position of nominal subjects in German is [Spec, VP]
(Lenerz 1993: 118), i.e. the right periphery of the middle field (i.e. field IV). Not
only are nominal subjects typically more rhematic than pronouns – thus tending
to let the pronouns precede them –, they are obviously also longer and weightier.
As a result, the principle of end-weight and the "Law of Increasing Constitu-
ents" (Behaghel 1909) become relevant. Given their rhematicity and constituent
length, nominal subjects generally prefer the right periphery of the middle field,
sometimes forcing *auch* to co-occupy field II with *immer*. The same principles
explain the restrictions on the single irrelevance particles *immer* and *auch*: *immer*
never follows nominal subjects because these do not compete for Wackernagel's
position, whereas *auch* virtually never precedes pronominal subjects, since *auch*
does not compete for this position.

   The other particle combination, *auch immer*, is less strongly related to the
nature of the subject as *immer* (…) *auch*, as seen in Table 4b:

Table 4b: Types of subject and *auch immer* in fields II/IV.

	field II	field IV	total
lexical subject	398 (1.6)	29 (-3.9)	427
pronominal subject	556 (-1.2)	125 (3.1)	681
Total	954	154	1,108

Although the result of the chi-square-test is significant ($\chi^2 = 28.37$; df = 1;
p < 0.0001), the association is rather weak (Cramér's V = 0.2), i.e. the nature of
the subject is only weakly associated with the positional tendencies of *auch
immer*. Since standardized residuals in field II do not deviate significantly from
the expected results, the left-leaning tendency of *auch immer* is not influenced
significantly by the nature of the subject. When *auch immer* does occupy its
dispreferred field IV, however, it tends to do so after pronominal subjects. The
underlying reason is, again, the general left-leaning tendency caused by thema-
ticity in pronouns, as argued above.

4.4 Particle combinations between disambiguation and overcharacterisation

With particle combinations, we return to the role of disambiguation as a factor in the distributional patterns seen in our data. There are good reasons, for example, to regard *auch immer* as a less ambiguous substitute for *auch* (cf. Leuschner 2013: 57). As pointed out above, the risk of ambiguity is high when *auch* occupies field II on its own. By contrast, *auch immer* is unambiguously an irrelevance marker, and this in turn explains why *auch immer* shows such a strong preference for II (86.1 %).

(24) a. *Was auch* die Mexikaner anpacken […]
           'Whatever the Mexicans tackle' / 'What also the Mexicans tackle'
      b. *Was auch immer* die Mexikaner anpacken […]
           'Whatever the Mexicans tackle'

In (24a.-b.), repeated from (17) above, the *W*-word is not the subject. (25a.–b.) illustrate the same effect in primary constructions in which the *W*-word is the subject:

(25) a. *was auch passiert* (M01/JUN.44510)
           'whatever happens' / 'whatever happens'
      b. *Was auch immer passiert* […] (LTB11/JUN.00726)
           'Whatever happens'

In (24a.) and (25a.), *auch* could either be an irrelevance particle or a focus particle. In (24b.) no reading of *auch* as a focus particle is possible, and although (24b.) could in principle be read as 'what also always happens', this interpretation is much less plausible than a straightforward irrelevance reading. As mentioned above, *auch immer* is significantly more frequent in subclauses like (25) in which the *W*-word is the subject, and *auch* significantly less. This is likely to be motivated by the fact that *auch immer* is less ambiguous, regardless of position, than *auch*.

Note that we have avoided saying that the addition of *immer* disambiguates *auch*. Although *auch immer* must have arisen as an ad hoc "open" combination of individual particles in the past, our synchronic analysis of it as a single, complex particle suggests that a reanalysis took place at some as yet unspecified stage in history, thenceforth ruling out compositionality. It is therefore more adequate to say that *auch immer* as a unit may take the place of *auch* on its own. Once *auch immer* is used in secondary constructions, where it is very dominant (91.05 %), plenty of opportunities arise for a second reanalysis, this time encompassing the *W*-word. This is how the discourse marker *wie auch immer* 'however', inter alia, must have been created, which however is not part of our sample in this study.

The open combination *immer* (...) *auch*, by contrast, has no such prospects, as shown by its minuscule share of secondary constructions (just 0.37 %, cf. Table 3). In primary constructions, it sometimes functions as a variant of *immer* to which *auch* is added for purposes of disambiguation. This can be useful in those rare instances where *immer* occupies field IV after a pronominal subject. In such cases, (26b.) is more likely to be read as an irrelevance particle than (26a.):

(26) a. *Was er immer* [...] *sagt* (RHZ06/MAR.23289)
     'Whatever he says' / 'What he always says'
   b. *Was man immer auch sagt* (SOZ13/FEB.04565)
     'Whatever one says'

Another context in which *immer* can be ambiguous are primary constructions in which the *W*-word is the subject:

(27) a. *Was immer passiert* [...] (A99/FEB.11037)
     'Whatever happens' / 'What always happens'
   b. *Was immer auch passiert* [...] (O95/JAN.07794)
     'Whatever happens'

Immer auch is relatively rare in such clauses (6.87 %, cf. Table 2b) compared with *auch immer* (13.91 %), yet together they barely dent the dominance of *immer* on its own (78.37 %). *Immer auch* is even less frequent in field II (1.64 %, cf. Table 2a) in clauses with a separate, clause-internal subject. This is unsurprising given that *immer* in field II (67.05 %) cannot normally be read as anything other than an irrelevance particle and is therefore not in need of disambiguation, whether in field II or IV. Yet another matter is *immer ... auch* (i.e. straddling the clause-internal subject, 11.09 %): here both particles are in their preferred positions where neither requires disambiguation. Such cases therefore represent overcharacterisation: more irrelevance markers are used than are functionally required.

A closer look at the data brings to light more complex marking strategies which may constitute either disambiguation or overcharacterisation. For example, when *auch* occurs in field II, there is a statistically significant tendency for the finite verb to be a form of the modal verb *mögen* 'may', as in (9a.), repeated here for convenience as (28):

(28) *Was auch* die Gründe sein <u>mögen</u>, nur jammern [...] hilft auch nicht weiter. (A01/OKT.32079)
     'Whatever the reasons may be, just complaining won't help either.'

Given the non-specific semantics of free-choice quantification and concessive conditionality, modalisation is a well-motivated strategy to support the irrelevance

reading of the clause and thus also of any ambiguous particle. Not surprisingly, 27.27 % of clauses with irrelevance *auch* in field II as in (28) contain a form of *mögen* (n = 6 out of 22, type a in Table 2a) vs. only 6.03 % with irrelevance *auch* in field IV, where *auch* is much less ambiguous (n = 39 out of 647, type f; two-tailed two-proportions Z-test: p < 0.0001). It is therefore safe to describe *mögen* combined with *auch* as a strategy of disambiguation, with some minor spillover leading to overcharacterisation. Compare this with *immer*: *mögen* occurs in 30.77 % of clauses where irrelevance *immer* is in field IV and therefore ambiguous (n= 12 out of 39, type i in Table 2a), but the difference is not significant (p = 0.13), as *mögen* also occurs in 23.11 % of clauses where *immer* is in field II and therefore unambiguous (n = 1,404 out of 6,075, type d). In combination with *immer*, *mögen* therefore tends to represent overcharacterisation, but this does not exclude it from serving genuine disambiguation on occasion.

A clear case of overcharacterisation arises when *mögen* is used in the subjunctive as in (28):

(29) [...] - *wer immer* das sein <u>möge</u> - [...] (P97/JAN.03698)
      'Whoever that may be'

However, this type of overcharacterisation is rare (n = 47; 0.26 % of all primary constructions). A different type of overcharacterisation is seen in (30), where *egal* 'no matter' is added in front of the subclause as a lexical marker of free-choice quantification:

(30) <u>Egal</u>, *was* sie *auch* tun (T06/DEZ.00330)
      'No matter what (lit. *whatever*) they do'

Whereas we have double modalisation by lexical means and subjunctive morphology in (29), (30) is best characterised as a contamination of two distinct subtypes of UCCs: one in which the quantification is expressed clause-internally by means of *auch* and/or *immer*, and one in which clause-external adverbs like *egal*, *gleichgültig* ('indifferent') etc. precede the *W*-word in combinations which arose historically from elliptical matrix clauses similar to English *(it is) no matter WH* (Leuschner 2006: Ch. 6). It is generally assumed that clause-internal and clause-external irrelevance marking are in complementary distribution (Breindl 2014:980), with very occasional contaminations of *egal W* and *W ... auch*, i.e. *egal W ... auch* (Leuschner 2006: 41). Although our data confirm that such contaminations are rare (n = 97; 0.53 % of all primary constructions), the pattern *egal W ... auch* is nonetheless more frequent than previously assumed: 8.16 % of all primary constructions with *auch* are contaminations with *egal* and similar adverbs, compared to < 1 % for other particles.

5   Conclusion

The present study has documented and analysed the distributional patterns of the particles *immer* and *auch* in *W*-initial, primary irrelevance clauses and elliptically reduced, secondary constructions, thereby partially replicating Leuschner's (2000) study on the basis of a vastly increased dataset from the *DeReKo* corpus. Our data confirm the complementary positional tendencies of *immer* and *auch*, with *immer* showing a near-exclusive preference for strict adjacency to the *W*-word and *auch* displaying a strong tendency to occupy the right periphery of the middle field. The functionally motivated positional preferences of the individual particles and of their combinations, the difficulties encountered by *immer* vis-à-vis the *W*-word despite its preference for strict adjacency, and the distinct behaviours of *auch immer* as a 'closed' particle combination and *immer* (...) *auch* as an 'open' combination – all reinforce the impression of an emergent subsystem whose evolutionary tendencies are probabilistic in nature rather than deterministic. This is furthermore suggested by occasional spillover into different forms of overcharacterisation on the one hand and a double reanalysis on the other hand which first created *auch immer* and then incorporated it, in secondary constructions, into individual W + *auch immer* combinations like the discourse marker *wie auch immer*.

Follow-up research could expand these findings in several directions. One path follows naturally from the fact that our sample covers only the core *W*-words *was* and *wer*; a true replication of Leuschner (2000) would also refer to *wie* 'how', *warum/weshalb/weswegen/wieso* 'why', *wann* 'when' and *wo* 'where', a mammoth task in view of the high frequency of these words and the need to include *wo*-compounds like *woher/wohin* 'where from/to', *womit* 'where-with, i.e. with which/what', *wogegen* 'where-against, i.e. against which/what' etc. A second path for future research leads to the more systematic inclusion of *egal* *W*-type markers, linking the dynamism of irrelevance marking at subclause level to the grammaticalisation of entire concessive conditional sentence constructions (Leuschner 2006). A third path would refer specifically to oral data, opening a window on the use and variation of irrelevance marking in spoken German, with a likely focus on the grammaticalisation of secondary constructions. Finally, a promising future perspective on irrelevance marking is crosslinguistic, i.e. typological or intragenetic, contrasting e.g. the synchronic variation and diachronic evolution of German irrelevance marking with the corresponding systems in Dutch (*W* (...) (*dan*) *ook* '*WH* (...) (then) also, i.e. *WH-ever*', *om het even W* 'no matter *WH*') and English. Comparison with these closely related languages is likely to highlight yet again the complex nature of irrelevance marking in German and to conclude, inter alia, that the conceivable grammaticalisation of *WH-ever*-like subordinators from *W*-word + *immer* combinations is likely to remain a protracted building-site in German for the foreseeable future.

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