On distributive pronouns
in the Baltic languages

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This article deals with the origin of the three distributive pronouns of the Baltic languages: Old Prussian *erains*, Lithuanian *kiekvíenas*, Latvian *ikviêns* 'everybody, everyone, each one'. They are all characterised by the numeral 'one' (OPr. *ains*, Lith. *víenas*, Latvian *viêns*), originally used as a pronominaliser, but they differ in their first element, which derives from a preposition 'until' in Old Prussian (*er*), from a conjunctive adverb 'how much' in Lithuanian (*kíek*) or from a form that could have been both of them in Latvian (*ik* 'as much as', but Lith. *ikì* 'until'). The aim of this paper is to explain the formation of these distributive pronouns and to account for their differences. It can be argued that the most ancient formation derives from a conjunction *ik* 'as much as' > 'as long as' > 'until' reanalysed as a distributive marker (Latvian), whereas Lithuanian *kiek-* and Old Prussian *er-* are recent modernisations of *ik-*.

Keywords: Lithuanian, Latvian, Old Prussian, distributive pronouns, reanalysis, correlation, etymology

1. Introduction

Indo-European comparative morphology has yielded significant results and, even if there are still some grey areas, we are fairly well informed about the prehistory of nominal and verbal formations. By contrast to this, there is much less consensus about the reconstruction of the PIE pronominal system. The reason for this is probably that pronouns are strongly affected by pragmatic parameters, such as the need to express deixis, saliency or emphasis, with the result that there is a pervasive tendency, in the individual languages, to reshape and reform them in order to make them better suited for their grammatical functions. Distributive pronouns, used in reference to individuals picked out separately from a set of persons or things ('everybody', 'everyone', 'each one'), can exemplify this process: there is no sufficient formal basis for the reconstruction of a common PIE distributive pronoun, and virtually all the distributive pronouns found in the historical languages are secondary innovations. The Baltic languages are no exceptions. In the three documented Baltic

languages we encounter three different formations: Old Prussian *erains*, Lithuanian *kiekvíenas*, Latvian *ikviêns* 'everybody, everyone, each one'. The question is whether these three forms reflect a common pattern or were created independently from one another. At first sight they seem to derive from the numeral 'one' (Old Prussian *ains*, Lith. *víenas*, Latv. *viêns*) preceded by different elements meaning either 'until' (Old Prussian *er* 'until'), 'how much, as much as' (Lith. *kíek*, interrogative and conjunctive) or both (Latv. *ik* 'how much, as much as', but Lith. *ikì* 'until'). The aim of this paper is to determine the derivational pathway that gave rise to each of these formations and to explain their distribution.

2. General description

Let us start with a brief description to illustrate the differences between the three languages. In Old Prussian, the distributive pronoun *erains* 'everybody, everyone, each one' corresponds to German *jeder, jedermann, ein jeglicher*. It is used three times in the *Enchiridion* (1561) in the nominative:

(1) Old Prussian

Bhe **erains** *ſwaian ſallūban milijt*
and **everyone.NOM.SG.M** his.ACC.SG wife.ACC.SG love.INF
bhe teiſint.
and honour.INF
'And everybody [must] love and honour his wife.' = German: *Vnd ein yeglicher ſein gemahel lieben vnd ehren.* (*Enchiridion*, 1561, iii 33_2)

(2) Old Prussian

Erains *boūſey pokluſman ſteiſei*
everyone.NOM.SG.M be.COND.3. submitted.ADV the.GEN.SG
Aucktimmiſkan.
authority.ACC.SG
'Let everybody be submitted to the authority.' = German: *Jeder man ſey unterthan der Obrigkeyt.* (*Enchiridion*, 1561, iii 89_{17})

(3) Old Prussian

Erains *mukinſuſin ſwaian mukinſnan.*
everyone.NOM.SG.M learn.FUT.REFL his.ACC.SG lesson.ACC.SG.
'Let everybody learn his lesson.' = German: *Ein jeder lern ſein Lection.* (*Enchiridion*, 1561, iii 97_{20})

once in the dative:

(4) Old Prussian

*Tīt daiti teinu **erainesmu** / kai ioūs*
thus give.IMP.2PL now **everyone.DAT.SG** how 2PL.NOM.
ſkellānts aſtai.
owing.NOM.SG be.PRS.2PL
'Give thus now everybody what you owe him.' = German: *So gebet nu jederman / was jr ſchuldig ſeid.* (*Enchiridion*, 1561, iii 91$_{8-9}$)

Erains has no cognate in East Baltic, with the possible exception of a single adverbial form in Latvian *arviên, arviênu, arviênam, arviênĭm* 'always, on and on' (ME 1923–1925, i 142, 'immer, in einem fort'), which remains completely unmotivated and isolated. The distributive pronoun in Latvian is *ikviêns* 'everybody' (ME 1923–1925, i 705, 'jeder'). It is regularly used from the earliest documents in the 16th century onwards:

(5) Old Latvian

Ickwens *gir tems wuerßenekems*
everyone.NOM.SG.M be.PRS.3 the.DAT.PL.M superior.DAT.PL
packloußyx.
submitted.NOM.SG.M
'Everbody is submitted to superiors.' (*Enchiridion*, 1586, 23$_5$, ed. Bezzenberger 1875)

(6) Old Latgalian

*Ta ir **ik wins,** kotrys*
thus be.PRS.3 **everyone.NOM.SG.M** who.NOM.SG.M
pidzyma nu Gora.
be.born.PST.3. from hell.GEN.SG
'Such is everybody who is born from hell.' (*Evangelia Toto Anno,* 1753, 86$_{25}$)

(7) Latvian (folksong)

Ikweens *fawu,* **ikweens** *fawu*
everyone.NOM.SG.M his.ACC.SG **everyone.NOM.SG.M** his.ACC.SG
Wakarâ gulèt weda.
evening.LOC.SG sleep.INF lead.PRS.3
'Everybody leads, everybody leads in the evening his own [livestock] to sleep.' (Baron & Wissendorff, *Latwju dajnas*, BW, 1909, 25118$_{1-2}$)

(8)   Modern Latvian

Ikviens   *to*   *var*   *izdarīt.*

everyone.NOM.SG.M that.ACC.SG can.PRS.3 do.INF

'Everybody can do that.'

Ikviêns is used in Latvian not only pronominally, but also as a determiner introducing a noun, as in (9–12):

(9)   Old Latvian

Pee **ikweena**   **Poſma**   *leez*   *Atstragu*

on   **every.GEN.SG.M level.GEN.SG** put.IMP.2SG pole.ACC.SG

tad   *Ꞩeeta*   *ne*   *ſchaubiſees.*

then   fence.NOM.SG NEG shake.FUT.3.REFL

'On each level put a pole so that the fence will not shake.' = German: *bey ieder Schicht setze einen Nebenpfahl so wird der Zaun nicht wackeln* (*Manuale Lettico-Germanicum,* ca 1690, 573)

(10)   Old Latgalian

ikwins   **Cyłwaks**

every.NOM.SG.M man.NOM.SG

'every man' (*Evangelia Toto Anno* 1753, 16_{14_15})

(11)   Latvian (folksong)

Peeꞩi   *dehli*   *tam*   *tehwam,*

five.NOM.PL.M son.NOM.PL the.DAT.SG.M father.DAT.SG

Peeꞩi   *fimti*   *oſoliꞃu:*

five.NOM.PL.M hundreds.NOM.PL oak.GEN.PL

Ikweeꞃam   *dehliꞃam*

each.DAT.SG.M son.DAT.SG

Pa   *fimtam*   *oſoliꞃu.*

PREP.DISTR hundred.DAT.SG oaks.GEN.PL

'The father has five sons and five hundred oaks: for each son, a hundred oaks.' (Baron & Wissendorff, *Latwju dajnas,* BW, 1909, 3753)

(12)   Modern Latvian

To   *var*   *izdarīt* **ikviens**   *bērns.*

that.ACC.SG can.PRS.3 do.INF **every.NOM.SG.M child.NOM.SG**

'Every child can do that.' (Mathiassen 1996, 73)

Ikviêns has no cognate in the other Baltic languages. There is only a handful of occurrences of a corresponding form *ikvienas* in Lithuanian,

in the works of Jonas Balvočius-Gerutis (1842–1915) and Adolfas Saba-liauskas (1873–1950), two authors coming from the border region with Latvia.[1] There is also a brief mention of *ikvienas* in the four-language dictionary by Mykolas Miežinis (1894, 83), who is known, however, to have mixed Latvian with Lithuanian forms.[2] *Ikvienas* is likely to be a Letticism confined to some regional usages of Lithuanian. A similar form, though with a difference of vocalism, is *iekvíenas* or *jiekvíenas* 'everybody, every one' attested in the Lithuanian dialect of Skirsnemunė.[3]

The Lithuanian distributive pronoun is *kiekvíenas*. It is documented since the first Lithuanian writings, but in the early stages faced competition from the Slavonic loanword *kõžnas* (< Belorussian *кожны*).[4] Mažvydas conspicuously prefers *kõžnas* (49x) to *kiekvíenas* (8x), but uses the latter with exactly the same meaning, as a pronoun (compare 13 and 14):

(13) Old Lithuanian

Tawes	**Koſznas**	*tur*	*bioti.*
you.GEN.SG	**everyone.NOM.SG**	have.to.PRS.3	fear.INF

'Everybody has to fear you.' = German: *des mus sich fürchten jederman.* (Martynas Mažvydas, *Gesmes ChrikſcƷoniſkas*, 1570, 341_{10})

(14) Old Lithuanian

Kiek wenas	*ką*	*giera*	*padariſs,*
everyone.NOM.SG.M	what.ACC	good.ACC.SG.N	do.FUT.3
tatai	*nog*	*Diewa*	*tur*	*turieti.*
that.ACC.SG.N	from	God.GEN.SG	have.to.PRS.3	have.INF

'Everybody must have all the good he has done from God.' = Latin: *unusquisque quod fecerit boni, hoc reportabit à Deo.* (Martynas Mažvydas, *Catechismusa Prasty Sʒadei*, 1547, 37_1)

and as a determiner (compare 15 and 16):

(15) Old Lithuanian

dalis	*makſla*	*/*	*Krikſcʒianiu*	*kurias*
part.ACC.PL	doctrine.GEN.SG		Christian.GEN.PL	which.ACC.PL.F

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[1] Data from the LKŽ (1957, iv 35).

[2] See Urbutis (1995, 5–28).

[3] LKŽ (1957, iv 344).

[4] Skardžius (1931, 109).

każnas   krikſczianiu   żmagus
every.NOM.SG.M Christian.GEN.PL man.NOM.SG

pawinnas   yr   kaltas   eſti   makieti
responsible.NOM.SG.M and owing.NOM.SG.M be.PRS.3 know.INF

bei   permaniti
and understand.INF

'the parts of the Christian doctrine that every Christian must learn and understand.' = Polish: *częsci navki Chrzescyanskei / ktore wszelki chrescyanski człowiek powinien vmiecz y rozumiecz.* (Martynas Mažvydas, *Catechismusa Prasty Sʒadei*, 1547, 17₇)

(16) Old Lithuanian

Niekniekas   byla   kiekwienas   wiras
stupidity.ACC.PL tell.PRS.3 every.NOM.SG.M man.NOM.SG

ſu   ſawa   artimuju.
with his   neighbour.INS.SG.M.DEF

'Every man says stupid things to his neighbour.' = Latin: *Vana locuti sunt unusquisque ad proximum suum*; German: *einer redet mit dem andern unütze ding.* (Martynas Mažvydas, *Gesmes Chrikſcʒo-niſkas*, 1570, 528₆)

In more recent sources, the competition has progressively turned in favour of *kiekvíenas*, with the result that in Modern Lithuanian *kõžnas* is now restricted to a minority of marginal dialects. In the modern language *kiekvíenas* is the only distributive pronoun and determiner (ex. 17–18):

(17) Modern Lithuanian

Kiekvienas   turi   savo svajonių.
everyone.NOM.SG.M have.PRS.3 his   dream.GEN.PL

'Everybody has his own dreams.' (Ramonienė & Pribušauskaitė 2008, 157)

(18) Modern Lithuanian

Jis   ateidavo   kiekvieną   dieną.
3.NOM.SG.M come.IMPF.3 every.ACC.SG day.ACC.SG

'He used to come every day.' (Žindžiūtė Michelini 2007, 73)

What emerges from these data is that no common Baltic form can be reconstructed for a distributive pronoun. This finding is consistent with

what we have in other Indo-European subgroups.[5] We must always be mindful of the instability of distributive pronouns across languages in investigating the origin of the Baltic forms. As a result, we do not necessarily need to introduce a common Proto-Baltic etymon in our reconstruction.

3. The numeral 'one'

This synchronic diversity is matched by the diversity of the diachronic sources to which these distributive pronouns can be traced back. The three Baltic forms share the numeral 'one' in their structure: Old Prussian -*ains* (in *erains*), Lithuanian -*víenas* (in *kiekvíenas*), Latvian -*viêns* (in *ikviêns*). The derivation of a distributive pronoun from the numeral 'one' corresponds to a pattern widely attested cross-linguistically [x + ONE]:

(19) French *chacun* (< *un*); Italian *ciascuno* and *ognuno* (< *uno*); Spanish *cada uno* (< *uno*); Dutch *iedereen* (< *een*); English *each one*, *everyone* (< *one*); Welsh (emphatic) *pob un* (< *un*); Breton *pep unan* (< *unan*); Modern Greek καθένας (< ένας); Hindi *pratiek* (< *ek*); Persian *har yek* 'each one (of them)' (< *yek*).

These languages can be divided at least into two groups. First, there are languages in which the addition of the numeral 'one' serves to distinguish a distributive pronoun from a distributive determiner introducing a noun (type 1):

(20) Type 1 (pronoun-ONE, vs. determiner): French *chacun* (< *un*), vs. *chaque livre* 'every book'; Spanish *cada uno* (< *uno*), vs. *cada libro* 'every book'; Dutch *iedereen* (< *een*), vs. *ieder boek* 'every book'; English *each one*, *everyone* (< *one*), vs. *each book*, *every book*; Welsh (emphatic) *pob un* (< *un*), vs. *pob llyfr* 'every book'; Breton *pep unan* (< *unan*), vs. *pep levr* 'every book'; Modern Greek καθένας (< ένας), vs. κάθε βιβλίο 'every book'; Persian *har yek* 'each one (of them)' (< *yek*), vs. *har ketâb* 'every book'.

The second type includes languages in which the addition of the numeral 'one' gives a distributive formation with no distinction between

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[5] In Germanic, for example, there exists a similar diversity of distributive pronouns and no common prototype can be established with certainty: Gothic has *ƕazuh*, Old Norse *hvárr-tveggi*, Swedish *varje*, Old High German *gilīh, eogilīh, hwelīh, eogiwelīh*, German *jeder*, Dutch *iedereen*, Old English *aēlc, ġehwelc*, English *each, every*.

pronoun and determiner (type 2). This is quite uncommon in the Indo-European languages; an example is Modern Italian:

> (21) Type 2 (pronoun-ONE = determiner-ONE): Ital. *ciascuno* 'everybody' = *ciascuno libro* 'every book'.

These two types are distinguished from a third and a fourth, in which there is no numeral 'one', either with a formal distinction between the pronoun and the determiner realised by other means (type 3) or without any such formal distinction (type 4):

> (22) Type 3 (pronoun, vs. determiner): Welsh *pawb* 'everybody, everyone', vs. *pob llyfr* 'every book'; Old Irish *cách* 'everybody', vs. *cach uball* 'every apple'.

> (23) Type 4 (pronoun = determiner): Ancient Greek ἕκαστος 'everybody' = ἕκαστος ἰητρός 'every physician' (Herodotus, ii 84); Romanian *fiecare* 'everybody' = *fiecare carte* 'every book'; Danish *hver* 'everybody' = *hver bog* 'every book'; Polish *każdy* 'everybody' = *każda książka* 'every book'; Hindi *har* 'everybody' = *har kitab* 'each book'.

If we try to model these different configurations in the form of a table, we obtain the following result:

Table 1. Pronominal and determiner forms of distributive pronouns

	Pronoun ≠ determiner	Pronoun = determiner
+ Numeral 'one'	Type 1 (pronoun-ONE, vs. determiner): French *chacun*, vs. *chaque livre*	Type 2 (pronoun-ONE = determiner-ONE): Ital. *ciascuno* = *ciascuno libro*
– Numeral 'one'	Type 3 (pronoun, vs. determiner): Welsh *pawb*, vs. *pob llyfr* 'every book'	Type 4 (pronoun = determiner): Romanian *fiecare* = *fiecare carte* 'every book'

This presentation does not exhaust the possibilities. Like any tetrachoric table, it focuses on a small number of criteria, but other parameters could be taken into consideration, such as the distinction between

distributive and global quantifiers, which can be relevant in some languages (e.g. Lith. *kiekvíenas* 'each, every', vs. *vìsas* 'all'), irrelevant in others (e.g. Pāli *sabba* 'every, all', cf. also Hebrew *kol*), or the distinction between distributives and free-choice indefinites, which can be relevant in some languages (e.g. Latin *quisque* 'every', vs. *aliquis*, *quidam* 'someone, anyone'), irrelevant in others (e.g. Albanian *çdonjëri* 'everyone, anyone'). Pronominalisation of a distributive determiner can also be achieved by means of a lexeme, such as 'man' (German *jedermann* < *Mann*, Irish *gach duine* < *duine*, Middle Cornish *pup den* < *den*, Albanian *çdonjëri* < *njeri*), 'person' (Persian *har kas* or *hame kas* < *kas*) or 'body' (Engl. *everybody* < *body*). The use of the numeral 'one' is only one of the possibilities. If one goes into the details, the picture is, in fact, much more complicated than this summary presentation. Moreover, it can be the case that different strategies are used within the same language, with different connotations.[6] The goal here is to establish simple and clear selection criteria that may help us understand the position of the Baltic distributive pronouns.

Taken at face value, the Baltic languages belong to our subtype 2, in which the numeral 'one' is regularly added to the distributive stem both in the pronoun and in the determiner, cf. Lith. *kiekvíenas* 'everybody' = *kiekvíenas žmogùs* 'every man' (compare the examples 17 and 18), Latv. *ikviêns* 'everybody' = *ikviêns cilvēks* 'every man' (compare the examples 8 and 12). As regards the Old Prussian form *erains*, we have no indisputable data to show whether *erains* was used only as a pronoun or as a determiner as well. Historically, it is likely that our subtype 2 represents a recent evolution of our subtype 1, in which the numeral 'one' is restricted to the pronoun: its extension to the determiner and, correlatively, its complete generalisation is probably an innovation.

(24) Type 1 (pronoun-ONE, vs. determiner) > Type 2 (pronoun-ONE = determiner-ONE)

It can be argued, for example, that the use of Italian *ciascuno* both as a pronoun and as a determiner (*ciascuno* 'everybody' = *ciascuno libro*

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[6] In colloquial Polish, for example, *każdy człowiek* 'each man' has a variant *każdy jeden człowiek*. It is possible that this use developed from contexts with numeral quantification (compare *każde dwa kilogramy* 'every two kilograms' and *każdy jeden kilogram* 'every [single] kilogram'). Similarly, in Irish, *cach oen* means 'every single one' and points out that the distributive count is realised unit by unit. In these instances, the numeral 'one' has no pronominalising function.

'each book') arose from a previous stage in which it was limited to the pronoun, as is still the case with *ognuno*, which is invariably a pronoun (*ognuno* 'everybody'), contrasting with *ogni*, invariably a determiner (*ogni libro* 'each book'). There is, therefore, good reason to consider that the addition of the numeral 'one' first had a pronominalising function in type 2 as in type 1. Distributive pronouns are not the only class of words in which this pronominalising function appears. In English, for example, the minimal pair *every book / everyone* is reminiscent of *this book / this one*, where the numeral displays the same function. In Italian, *ognuno* and *ciascuno* are parallel to *nessuno* 'no one, nobody' and *qualcuno* 'someone'. It is therefore likely that the numeral 'one' in the Baltic forms (Lith. *kiekvíenas*, Latv. *ikviêns*, Old Prussian *erains*) has no distributive value in itself, but was originally used as a pronominaliser, contrasting with determiners that did not have the numeral. The system can thus be reconstructed as follows:

(25) Type 1 (determiner, vs. pronoun-ONE):
Lithuanian   **kíek* + NOUN, vs. *kiekvíenas*
Latvian   **ik* + NOUN, vs. *ikviêns*
Old Prussian **er* + NOUN, vs. *erains*

At a later stage, the numeral 'one' was generalised to all contexts, exactly as in Italian *ciascuno*:

(26) Type 2 (determiner-ONE, vs. pronoun-ONE):
Lithuanian   *kiekvíenas* + NOUN, vs. *kiekvíenas*
Latvian   *ikviêns* + NOUN, vs. *ikviêns*
Old Prussian (probably)   *erains* + NOUN, vs. *erains*

In Italian, the extensive use of *ciascuno* both as a pronoun and as a determiner (type 2) has replaced an older system in which it was used only as a pronoun, contrasting with the determiner *ciasche* (type 1):[7]

(27) Type 1 (determiner, vs. pronoun-ONE):
Old Italian   **ciasche* + NOUN, vs. *ciascuno*

There are still remnants of this system in Old Italian (ex. 28 with *ciasche* determiner):

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[7] One may also note the complex *ciascheduno* 'everybody' used since Dante (e.g. *Inferno*, xx 36, *Paradiso*, xxviii 34).

(28) Old Italian

*in **ciasche rione** de Roma*
in **every.sg district.sg** of Rome.sg
'in every district of Rome' (Anonimo Romano, *Cronica*, vi, ed. G. Porta, 1979 [14th century])

But the modern system was regular already at the time of Dante (ex. 29):

(29) Old Italian

***Ciascuna parte,** fuor che l' oro, è*
every.sg part.sg except that the gold.sg be.prs.3.sg
rotta.
corrupted.sg.f
'Every part, except for gold, is corrupted.'[8] (Dante, *Inferno*, xiv 112 [14th century])

With this parallel in mind, one may assume for the Baltic languages a similar evolution from type 1 to type 2, which implies the reconstruction of distributive determiners as follows:

(30) **kíek-* + noun in Lithuanian
**ik-* + noun in Latvian
**er-* + noun in Old Prussian

There is powerful evidence in support of this hypothesis. In Old Lithuanian, there are several instances of *kíek* as a distributive determiner, accompanying a noun, instead of *kiekvíenas*. This usage has disappeared from the modern dialects. Even in Old Lithuanian it is only marginally documented, most clearly in Mažvydas (ex. 31–33):

(31) Old Lithuanian

Ghyſſai atleid grekus tawa /
3.nom.sg.m forgives.prs.3 sin.acc.pl your
*Jſʒgida **kiekliga** tawa.*
heal.prs.3 **every=disease.acc.sg** your
'He forgives you your sins / and heals all your diseases.' =
Polish: *On odpuszcza grzechy twoje, leczy wselką niemoc twojęi;*

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[8] Cf. also Dante: *ciascun sentimento* (*Inferno,* iii 135 and xxxiii 101), *in ciascuna sua legge* (*Inferno,* x 84), *ciascun linguaggio* (*Inferno,* xxxi 80), *ciascuna spalla* (*Inferno* xxxiv 41), *ciascuna artista* (*Paradiso,* xxx 33). There is no instance of *ciasche* in Dante.

German: *Hat dir dein Sünd vergeben / unn hailt dein Schwachhait groß.* (Martynas Mažvydas, *Catechismusa Prasty Sʒadei*, 1547, 60$_4$)

(32) Old Lithuanian

Kiek   daikta   *ſawa   macʒij   walda.*
every   thing.ACC.SG his   strength.LOC.SG holds.PRS.3
'He holds everything in his hands.' = Polish: *wszystkoć on sam w mocy swojej ma*; German: *es stet alles in seiner macht.* (Martynas Mažvydas, *Catechismusa Prasty Sʒadei*, 1547, 70$_4$)

(33) Old Lithuanian

Taip atpencʒ ſʒmogau   **kiek   cʒeſa**   /
thus   again   man.VOC.SG **every   time.ACC.SG** /
Bůk   tu   prieg Diewa   ſʒodʒa.
be.IMP.2SG   2SG.NOM near God.GEN.SG word.GEN.SG
'Thus, o man, be all the time again near the Word of God.' = German: *Am Gottes wort man warten sol / des gleichen alle stunden.* (Martynas Mažvydas, *Gesmes Chrikſcʒoniſkas*, 1570, 350$_{13}$)

more limitedly in other works until the 17th century (ex. 34–36):

(34) Old Lithuanian

Kiek   diena   *ſawa tur   warga.*
every day.NOM.SG its   have.PRS.3 trouble.ACC.SG
'Each day has enough trouble of its own.' (Jonas Bretkūnas, *Postilla*, 1591, ii 395$_2$)

(35) Old Lithuanian

idąṅ **kiek   dienós**   *ʒ́îg̨i   kok̨į*
so.that **every day.GEN.SG** step.ACC.SG some.ACC.SG.M
padarîtu̧...
do.COND.3
'so that each day he could make one step...' = Polish: *áby co dźień postępek iáki vcżynił...* (Mikolajus Daukša, *Kathechismas*, 1595, 121$_{3-4}$)

(36) Old Lithuanian

*Ding jedes   **kiek   daikts***
thing every.N.SG **every thing.NOM.SG**
'everything' (*Lexicon Lithuanicum*, 24$_3$ [17th century])

Three observations need to be made. First, the determiner *kiek* was probably proclitic in these archaic instances, as suggested by the spelling *kiekliga* 'each disease' (Mažvydas 1547, 60$_4$, for *kiek liga) and especially *kiewaika* 'each child' (Mažvydas 1547, 11$_{25}$, for *kiek waika). Second, *kiek* was consistently invariable. The categories of case and gender were conveyed by the following noun alone (ex. *kiek daikts* 'everything'):

Table 2. Morphosyntax of kiek *in Old Lithuanian*

nominative	*kiek daikts* (†*kiek diakts*)	Mažvydas (1566, 202$_3$)
accusative	*kiek daikta*	Mažvydas (1547, 70$_4$)
genitive	*kiek daikta*	Mažvydas (1570, 345$_4$)
instrumental	*kiek daiktu*	Mažvydas (1566, 182$_3$)
locative	*kiek daikti*	Mažvydas (1566, 157$_7$)

Third, the determiner *kiek* was often used by Mažvydas in contexts of temporal quantification,[9] but not exclusively: it appears with other substantives as well.[10] After Mažvydas, the use of *kiek* with temporal designations clearly outweighs that with other types of nouns. In the modern language, the construction *kíek*- + NOUN has regularly been replaced by *kas* + NOUN both with temporal designations, which is the most frequent case (ex. 37), and with other designations (ex. 38):

(37) Modern Lithuanian
    Kas   ***valanda***   *tamsiau*   *darėsi.*
    every hour.NOM.SG darker.ADV become.PST.3.REFL
    'Every hour it was getting darker.' (*Lietuvių kalbos gramatika*, 1965, i 703)

(38) Modern Lithuanian
    Dabar ***kas***   ***žingsnis***   *atsiveria*   *nematyti*
    now   **every step.NOM.SG** open.out.PRS.3.REFL unseen.NOM.PL.M

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[9] E.g. *kiek czeſa* 'all the time' (Mažvydas 1570, 350$_{13}$, cf. also 366$_3$, 412$_5$, 524$_2$, and 1547, 69$_2$), *kiek denas* 'every day' (Mažvydas 1547, 12$_{11}$), *kiek nedelias* 'every Sunday' (Mažvydas 1547, 11$_{13}$).

[10] E.g. with *griekas* 'sin' (Mažvydas 1547, 55$_2$, 1570, 569$_2$), *vaikas* 'child' (Mažvydas 1547, 112$_5$), *liga* 'disease' (Mažvydas 1547, 60$_4$, 1570, 352$_5$).

vaizdai.
views.NOM.PL
'Now, at each step, unseen views open out.' (*Lietuvių kalbos gramatika*, 1965, i 703)

This construction *kas* + NOUN, probably calqued from Polish *co* + NOUN (e.g. *co dzień* 'every day', *co krok* 'each step', mostly adverbial), is already documented in the 16th century. The first example comes from Daukša (1599) and is clearly loan-translated from Polish (ex. 39):

(39) Old Lithuanian
*Bęt' **kasˑ gałwa** tatái iʃʒmintis /*
but **every head.NOM.SG** that conscience.NOM.SG
***kas Miniʃtras** tai kitá wiera*
every minister.NOM.SG that other.NOM.SG. faith.NOM.SG.F
arbá tikéiimas.
or faith.NOM.SG
'But each head is a conscience, each minister is a different faith.'
= Polish: *Ále co głowá to roʒum: co miniʃter to inʃa wiárá.* (Old Lithuanian: Mikolajus Daukša, *Postilla Catholicka*, 1599, 258₆)

Other examples are found in Sirvydas' *Dictionarium trium linguarum* (³DTL, ca 1643):

(40) *co dźień / In dies. Kas diena* 'every day'
and its derivative
Codźienny / Amphemerinus, quotidianus. Kasdienis 'daily' (p. 36); *co rok. Quotannis. Kas metay* 'every year' (p. 37); *Káʒdą ráʒą / co raʒ. Singulis temporibus, ʃingulis vicibus. kas kartas* 'every time' (p. 100)

In the mid-19th century, Simonas Daukantas renders Pol. *co dzień* 'every day' both by *kasdiena* and *kiekdiena*.[11] In the modern language, *kas* + NOUN and *kiekvíenas* + NOUN have completely ousted *kíek-* + NOUN, and I have not found any dialect in which the ancient structure was preserved.

In Latvian there is evidence for a similar evolution. The reconstructed pattern [*ik-* + NOUN], vs. [*ikviêns*] has left a few traces in Old Latvian, but the situation differs from that in Lithuanian in several aspects. The first thing to note is that the ancient texts testify to a quadripartite, not only

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[11] Daukantas, *Didysis lenkų-lietuvių kalbų zodynas* (ca 1850, i 143, ed. Subačius 1993, i 118).

a bipartite distinction. In Old Latvian, we find *ikviêns*, *ikkatrs*, *ikkurš* and very rarely *ik* alone. Some of these forms can also be used in a distributive meaning alone without *ik-* (for example *katrs* and *kurš*); in Modern Latvian, this possibility has greatly expanded (e.g. Modern Latvian *katru dienu* 'every day').

The distribution of these different possibilities is difficult to establish. To judge from the Old Latvian data that are accessible to me,[12] *ikviêns*, *ikkatrs* and *ikkurš* are largely synonymous: they are used predominantly as pronouns,[13] more rarely as determiners,[14] and there is no significant difference between them. Generally speaking, the distinction between pronoun and determiner does not appear to be relevant in Old Latvian. The position of *ik* alone is different: it is overwhelmingly used in combination with temporal designations. The first example comes from the *Catechismus Catholicorum* (1585): *ick gaddeſkaerdt* 'every year' (1585, 18_{18}, ed. Günther 1929, i 260: *gadskằrta* 'year'); the combination *ik gadus* 'every year' also appears in the New Testament from 1685 (Ebr. 9, 25; 10, 1; 10, 3: *ik Gaddus*) and in the *Manuale Lettico-Germanicum* (ca 1690, 129: *ikgaddus*). Most frequent is the combination with the genitive singular *dienas* 'day' (GEN.SG) in *ik dienas* or *ikdienas* 'every day':

(41) *Jckdenas* (*Undeutsche Psalmen*, 1587, 5_1); *ick=deenas* (Mancels 1637, viii 30); *Täglich / ickdeenas* (Mancels 1638, ed. Günther 1929, ii 386); *ikdeenas* (*Tas Jauns Testaments*, 1685, Mt. 28, 20; Lk. 9, 23, etc.); *ik deenas* (*Tas Jauns Testaments*, 1685, Lk. 22, 53); *ikdeenas täglich* (*Manuale Lettico-Germanicum*, ca 1690, 84, 101, 644); *ik deenas* (*Manuale Lettico-Germanicum*, ca 1690, 396); *alle Tage, ikdeenas* (Elvers 1748, 246); *ik dinas* (*Evangelia toto anno*, 1753, 58_{11}). Note also: *ik ſwehdeenas* 'every festive day, every Sunday' (*Tas Jauns Testaments*, 1685, Apd. 13, 27; 15, 21); *ik ſwatdinias* (*Evangelia toto anno*, 1753, 105_2); *ik swėdienes* (Bezzenberger 1885, 43).

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[12] See Blinkena *et al.* (ed. 2002, 390–391) for more data. I have also consulted the on-line Old Latvian corpus <www.korpuss.lv/senie>, from which some of my data are drawn.

[13] Examples of *ikviêns*, *ikkatrs* and *ikkurš* used as pronouns: *ickwens* 'everybody' (*Enchiridion*, 1586, 50_2, ed. Bezzenberger 1875, 23), *ick=kattram* 'to everybody' (Mancels 1637, xx 17, ed. Günther 1929, ii 481), *ikkurſch* 'everybody, everyone' (*Tas Jauns Testaments*, 1685, Rm. 15, 2).

[14] Examples of *ikviêns*, *ikkatrs* and *ikkurš* used as determiners: *ikweens Augſts-Preeſteris* 'each High Priest' (*Tas Jauns Testaments*, 1685, Ebr. 5, 1), *ick=kattra Teeſſa* 'every truth' (Mancels 1637, xxix 26, ed. Günther 1929, ii 512), *ikkurſch Prettineeks* 'each opponent' (Ravensberg 1767, 16_5).

Other collocations are attested. In the Latvian grammar by Adolphi (1685, 227), an extensive list is given, which illustrates the semantic domains in which the distributive determiner *ik* appears:[15]

(42) *Ikdeenas / tåglich* 'everyday'; *ik gaddâ / jåhrlich* 'every year'; *ik rihtâ / alle Morgen* 'every morning'*; ik nakts / alle Nåchte* 'every night'; *ik ſtundas / alle Stunden* 'every hour'; *ik neddeles / alle Wochen* 'every week'; *ik Mehneſchu / alle Monat* 'every month'; *ik brihdi / ik brihſchu / ſtåtiglich* 'every moment'; *ik aʒʒumirklî / alle Augenblick* 'every moment'; *ik reiſ / jedesmahl* 'every time'.

Strikingly enough, the construction of *ik* exhibits some variations. As a rule, *ik* is followed by the genitive (type *ik dienas*), but there seems to be also evidence for the nominative (type *ik diena*, reduced to *ik dien*, *ikdien*)[16] and for the accusative of temporal extension (type *ik gadus*). In the Latvian folksongs collected by Gustav Bergmann at the beginning of the 19th century (1808, ii), both the genitive and the shortened form occur side by side: *ik svēdienas* and *ik svēdien / jeden Sonntag* 'every Sunday' (Biezais 1967, 42 and 43), *ik vakarôs* and *ik vakar / jeden Abend* 'every evening' (Biezais 1967, 74 and 79). The two constructions might reflect, in some way, the diverging influence of Polish, which has both *co dnia* (genitive) and *co dzień* (nominative) 'every day'. An alternative explanation could be that the original genitive construction (*ik dienas*) was reduced to *ik dien* due to the grammaticalisation of the two-word structure as a single adverb. Additionally, in the Latvian folksongs, metrical factors might have played a role in the choice of one or the other of the two forms. In Old Latvian, the genitive construction is predominant. This is a striking difference from Old Lithuanian, where the nominative construction is the most frequent one, whereas the genitive construction is extremely rare: compare, however, the nominative construction *kiek diena* in Bretkūnas (ex. 34) and the genitive construction *kiek dienos* in Daukša (ex. 35).

The majority of the examples presented so far refer to temporal designations, and this semantic limitation seems to be a powerful constraint

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[15] Cf. also *ik mehnes* 'every month' (*Manuale Lettico-Germanicum*, ca 1690, 304), *ik riht* 'every morning' (*Manuale Lettico-Germanicum*, ca 1690, 30), *ikreiz* 'every time' (*Manuale Lettico-Germanicum*, ca 1690, 420); *ik ſtundas* 'every hour' (*Tas Jauns Testaments*, 1685, 1Kor 15, 30).

[16] On this variation see Gāters (1993, 241).

both in Old and Modern Latvian. However, the language of the Latvian folksongs, which is famous for its archaism, displays a broader range of meanings:

(43) Latvian (folksong)

Mans   *wihrins*   *juhrinâ*
my.NOM.SG.M man.NOM.SG sea.LOC.SG

Peezi   *menzi*   *laiwinâ,*
five.NOM.PL cod.NOM.PL boat.LOC.SG

Peezi   *menzi*   *laiwinâ,*
five.NOM.PL cod.NOM.PL boat.LOC.SG

Ik   ***behrnina***   *menzis*   *bij.*
each **child.GEN.SG** cod.NOM.SG bet.PST.3

'My man on the sea, five cods in the boat, five cods in the boat: there was one cod for each child.' (K. Baron & H. Wissendorff, *Latwju dainas,* BW, 1910, 30810)

(44) Latvian (folksong)

Aili, manu   *wezu*   *tehwu,*
eh my.ACC.SG old.ACC.SG father.ACC.SG

Baltas   *maiſes*   *arajinis;*
white.GEN.SG.F bread.GEN.SG plougher.NOM.SG

Ik   ***wadſinas***   *galinâ*
each **furrow.GEN.SG** end.LOC.SG

kà   *balodis*   *nopuhtàs.*
like dove.NOM.SG sigh.PST.3.REFL

'Eh, my old father, the one who ploughed white wheat, at the end of each furrow he sighed like a dove.' (K. Baron & H. Wissendorff, *Latwju dainas*, BW, 1909, 25361, variant 1)

A modern example is:

(45) Latvian

Ik   ***māte,***   *par*   *savu*   *bērnu*
every **mother.NOM.SG** about her.ACC.SG child.ACC.SG

domājot,   *ir*   *vērīgāka*   *par*   *visiem*
think.GER be.PRS.3 more.attentive.NOM.SG.F over all.DAT.PL.M

dakteriem.
doctor.DAT.PL

'Every mother, thinking about her child, is more attentive than

all the doctors.' (J. Kalniņš 1979, 85, cf. Blinkena *et al.*, ed., 2002, 391)

At first glance these instances seem to reflect an archaic state of affairs, corresponding to the reconstructed pattern proposed above [*ik-* + NOUN]. But things are not so simple. One could argue the other way round that they represent the secondary extension of a pattern first limited to temporal referents or, to put it in a different way, the reduction of the complete form *ikviêns* to *ik* due to the equivalence between *ik* and *ikviêns* with temporal referents (compare *ikdìenas* and *ikviênas dìenas*). One of the major features of the Latvian folksongs is their brevity, which could have promoted the choice of the short form *ik* instead of the long form *ikviêns*.

Finally, one may note that, in the Latvian folksongs, *kas* + NOUN is sometimes used as a distributive determiner in the same way as Lithuanian *kas* + NOUN, obviously a loan-translation from Polish *co* + NOUN.[17]

The Old Prussian data are too scanty to allow the reconstruction of a similar distinction between a determiner [*er* + NOUN] and a pronoun [*erains*]. We only have evidence for *erains* as a pronoun, so that nothing precise can be said about how the function of the distributive determiner was expressed in Old Prussian. But, even without exploitable data, we can assume that the prehistory of Old Prussian was parallel to that of the other Baltic languages, considering that, as a rule, where distributivity is connected with the numeral 'one', its original function was generally that of a pronominaliser.

4. The origin of Old Prussian *er-*, Lithuanian *kiek-*, Latvian *ik-*

Let us now address the origin of the initial elements of the Baltic distributive pronouns. From what has been said above it should be clear that the distributive meaning of our three Baltic forms (Old Prussian *erains*, Lithuanian *kiekvíenas*, Latvian *ikviêns*) is not due to the numeral 'one' used indefinitely, but is proper to the first element (Old Prussian *er-*, Lithuanian *kiek-*, Latvian *ik-*), since it is—or, in the case of Old Prussian, is likely to have been—able to convey this meaning alone, without the numeral. The question is, first, how these three elements acquired a distributive meaning and, second, how they can be compared to each other. Each

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[17] Examples of *kas* + NOUN in Latvian are given by Gāters (1993, 241).

of these three elements has an independent existence in Baltic and their meanings are different.

4.1. Old Prussian *er-*

Old Prussian *er* corresponds to German *bis* 'until', accompanying a preposition, and appears in two forms, *er* in *er prei* 'until' (= German *bis an*) and *er en* 'until' (= German *bis in*), cf. (46) and (47):

(46) *bhe polāiku   mans   drūktai / en ſwaiāsmu wirdan*
and hold.PRS.3 1PL.ACC firm.ADV in his.DAT.SG word.ACC.SG
*bhe Druwien /   **er   prei**   noūſon   wangan*
and faith.ACC.SG **until towards** 1PL.GEN.PL end.ACC.SG
'And he holds us firmly in his word and faith until our death.' =
German: *vnd behelt vns feſt in ſei = nem Wort vnd Glauben / biß an vnſer ende.* (Old Prussian: *Enchiridion*, 1561, iii 51_{19})

(47) *Stas   Rikijs   pokūnti   twaian*
the.NOM.SG Lord.NOM.SG protect.COND.3 your.ACC.SG
*Eneiſſannien bhe iſeisennien eſteinu   **er   en***
entry.ACC.SG and exit.ACC.SG from.now **until in**
prābutſkan.
eternity.ACC.SG
'May the Lord protect your entry and exit from now until eternity.' = German: *Der Herr beware deinen Eingang vnnd Außgang vonn nun an biß inn Ewigkeit.* (Old Prussian: *Enchiridion*, 1561, iii 123_3)

and *ergi* in *ergi en* 'until' (= German *bis ins*), cf. (48):

(48) Old Prussian
ſtans   grīkans   ſteiſei   tāwans   kāimaluke /
the.ACC. PL sins.ACC.PL the.GEN.SG fathers.ACC.PL visit.PRS.3
*ēnſtēimans   malnijkans / **ergi   en** tīrtin   bhe*
in = the.DAT.PL child.ACC.PL **until in** third.ACC.SG and
ketwirtin   ſtreipſtan.
fourth.ACC.SG generation.ACC.SG
'[God] visits the sins of the fathers on the children until the third and fourth generation.' = German: *die ſůnde der Våter heimſucht an den Kindern bis ins Dritte vnd Vierde gelied.* (*Enchiridion*, 1561, iii 37_{15})

There does not appear to be any difference between *er* and *ergi*, the latter being an extension of the former by means of a particle *-gi*, which is known to have been added to prepositions, cf. *surgi* 'around' (iii 101_{11} = German *um*), and to various conjunctions, cf. *beggi* 'therefore', *dīgi* 'also', *kāigi* 'how', *neggi* 'and not', *niqueigi* 'never again'.[18] The same particle was frequent in Old Lithuanian in the formation of prepositions, cf. *ing(i)* 'into', *prieg(i)* 'near, to', *nuog(i)* 'from', more rarely *išg(i)* 'from'. Stang (1954, 11–18 = 1970, 189–195) has convincingly shown that *-gi* originally had an emphatic value in association with prepositions and that the starting point of its fixation in Old Lithuanian were those prepositions that were parallel to the synthetic local cases (inessive, illative, adessive, allative) and conveyed, in contrast to them, an emphatic meaning. As Stang puts it (1954, 16 = 1970, 193–194):

> Falls nämlich in einer frühen Periode des Litauischen die sekundären Kasus die gewöhnliche, "merkmallose" Bezeichnung dieser örtlichen Verhältnisse geworden waren, so scheint es eine berechtigte Annahme zu sein, dass *į̃*, *priẽ* eben in emphatischen Ausdrücken bevorzugt wurden, wo auch die Partikel *-gi* ihren natürlichen Platz hatte.

Owing to the scarcity of the philological data, we are unable to make the same assumption about Old Prussian *er / ergi*, but it is likely that Stang's reconstruction is valid for Old Prussian too, though it appears already in an advanced state of fixation. The important point here is that there is only one exploitable form *er* 'until' (corresponding to German *bis*), apparently identical to the first element of the distributive pronoun *erains*. We still have to define the position of *er* in Old Prussian. Like *bis* in German, it is neither a true preposition (since it introduces a preposition), nor a true adverb (since it cannot be used without a following preposition). The only possible way to define it is to call it 'prepositional adverb', but this is only a cursory labelling which leaves out certain aspects.

The origin of Old Prussian *er* 'until' is quite unclear. Berneker (1896, 289) derives *er* from a coordinating 'and' (cf. Lith. *iř* 'and') and compares its semantic evolution with that of Old High German *unte*, Middle High German *unt, unz* 'until' < 'and'. Trautmann (1910, 330) mentions a number of cognates (Lith. *argì* 'wirklich, etwa', *arnè* 'oder nicht', Old Lith. *er, ergi* interrogative particle, Gr. ἄρα, ἄρ, ῥα) without providing any func-

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[18] References in Petit (2010, 264).

tional explanation. Mažiulis (PKEŽ, ²2013, 181) reconstructs an evolution 'and, also' > 'until', for which he finds a parallel in Lithuanian *nèt* 'also, even' > 'until' (Old and dial. Lith.).[19] The same explanation is endorsed by Rosinas (2009, 322). The Indo-European prehistory of this particle *er* (< *h₁er* or directly *Hr̥* = Lith. *ir̃*) remains in the dark, both from a formal and from a functional point of view, but, whatever its ultimate origin, it seems clear that Old Prussian *er* 'until' results from the reanalysis of a particle as preposition ('and, also, even' > 'until'). If it is regarded as the source of the distributive pronoun, it must derive from the prepositional meaning ('until' > 'every') rather from any other more original meaning ('and, also, even', or the like). This scenario has a certain plausibility, but it remains to determine the precise semantic pathway that led from a preposition 'until' to a distributive marker.

4.2. Lithuanian *kiek-*

The Lithuanian distributive marker *kiek-* (in *kiekvíenas*) is identical to the quantitative interrogative and conjunctive stem *kíek* 'how much, how many'. In Lithuanian, *kíek* is both interrogative 'how much, how many, how often' (ex. 49–50):

> (49) Old Lithuanian
> **Kiek   daiktu   yra   / krikʃzôni**
> **how.many things.GEN.PL be.PRS.3 Christian.DAT.SG**
> *reikáligu?*
> necessary.GEN.PL
> 'How many things are necessary to a Christian?' (Mikolajus Daukša, *Kathechismas* (1595, 21₁₇–22₁))

> (50) Lithuanian
> **Kiek   buvo   žmonių?**
> **how.many be.PST.3 people.GEN.PL**
> 'How many people were there?' (Jablonskis 1919, 157, § 223)

and conjunctive 'as much as, as often as' (ex. 51–52):

> (51) Old Lithuanian
> *Tatai   darikiet   **kiek**   **kartu**   gierʃʃit*
> that.ACC.SG do.IMP.2PL **as.many** **time.GEN.PL** drink.FUT.2PL

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[19] A further parallel could be Tocharian B *eṃṣke* meaning both 'up to, until' and 'even'.

ant   atminima   mana.
on   memory.GEN.SG my
'Do this, as often as you drink, in remembrance of me.' = Polish:
tho cżinczie / ile krocz bądzięcie pyć na pamiątkę moię. (Martynas
Mažvydas, *Catechismusa Prasty Sƶadei*, 1547, 27$_{5\_6}$)

(52) Modern Lithuanian
Čia   buvo   užveja   ir   ledo
here be.PST.3 sheltered.place.NOM.SG and ice.GEN.SG
kiek   nori.
as.much.as want.PRS.2SG
'There was here a place sheltered from the wind and some ice,
as much as you want.' (*Lietuvių kalbos gramatika*, 1976, iii 902)

In the standard language and in the dialects, there are several distinct semantic effects produced by *kiek*, depending of the context: quantity ('how much' / 'as much as'), durativity ('how long' / 'as long as'), iterativity ('how often' / 'as often as').[20] Another use of *kíek* is particularly striking: *kíek* can be used indefinitely to indicate a certain amount of things, a certain quantity, as in (53) or adverbially in (54).

(53) Modern Lithuanian
Duok   kiek pinigų.
give.IMP.2SG **some** money.GEN.PL
'Give me some money' (LKŽ, 1959, v 743)

(54) Modern Lithuanian
Antrasis   leidimas   kiek
second.NOM.SG.DEF edition.NOM.SG **on.some.points**
skiriasi   nuo   pirmojo.
differs.PRS.3.REFL from first.GEN.SG.DEF
'The second edition differs on some points from the first one.'
(LKŽ, 1957, v 743)

Several points should be noted. *Kíek* is typically a multivalent quantifier: it can be used as an adverb, modifying a verb (as in 51 or 54), or in an argumental function, subject (as in 49 and 50) or object (in 53). This diversity of syntactic functions is shared by other multivalent quantifiers, such as Lith. *daũg* 'much' or *ganà* 'enough', and there are reasons for

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[20] See the references in LKŽ (1959, v 744).

treating *kíek* in the same way.[21] There are other features common to *kíek* and the other multivalent quantifiers: their invariability and their construction with the genitive. If we try to compare the quantifier *kíek* and the distributive *kíek*, we have to assume that the construction with the case required by the context (e.g. *kiek diena* 'every day', acc. *kiek dieną*, etc.) is secondary to the construction with the genitive (e.g. *kiek dienos*), since only the latter construction corresponds to what we find with the quantifier.

Historically, there is no doubt that *kíek* belongs to the interrogative stem *ka-* of *kàs* 'who?', which goes back to PIE *$k^u o$-, and we see that this stem has the same syntactic extension as *kíek*: it can be used as an interrogative, as a conjunctive and, in somewhat more limited conditions, as an indefinite stem. The precise etymology of *kíek* is an internal matter for Indo-Europeanists and does not need to concern us here.[22] There is a cognate in some Latvian dialects *ciêk*, beside *cik* 'how much, how many?'. The important thing to note is that the interrogative-conjunctive adverb *kíek* 'how much, how many' is paralleled in Lithuanian by a demonstrative *tíek* 'so much, so many' and that both forms can be mutually interrelated within a correlative system, as shown by the following example (55):

> (55) Modern Lithuanian
>
> ***Kíek*** *prãšė,* ***tíek*** *daviaũ.*
> **how.much** ask.PST.3 **so.much** gave.PST.1SG
> 'I gave him as much as he asked for.' (lit. 'As much as he asked for, so much I gave.') (Smoczyński 2007, 675)

The demonstrative *tíek* 'so much, so many' presents a variant *tìk* specialised in the meaning 'so much, and not more' > 'only'; it corresponds to Latvian *tikai* 'only', a form derived from *tik* 'so much'. The formal relationship between *tíek* and *tìk* is part of a broader issue, involving other forms as well, such as Lith. *tíek*, vs. Latv. *tik*, Lith. *kíek*, vs. Latv. *cik*, etc. We will come back to this issue later. At this point, there seems to be an unbridgeable difference between Old Prussian, where the distributive pronoun (*erains*) goes back to a prepositional adverb *er* ('until'), and

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[21] On the notion of 'multivalent quantifiers' see a presentation in Petit (2012, 227).

[22] Cf. Smoczyński (2007, 283), who reconstructs PIE *$k^u e i$-ko-. Cf. also Rosinas (2009, 278). The acute tone of Lith. *kíek* and Latv. dial. *ciêk* can be due to the analogy of the qualitative determiner Lith. *kóks*, Latv. *kâds* 'which' (< PIE *$k^u e h_2$- + different suffixes *-kos or *-$k^u os$, resp. *-dos, cf. Old Church Slavonic *kakъ*, Lat. *quālis*).

Lithuanian, where the distributive pronoun (*kiekvíenas*) goes back to an interrogative-conjunctive adverb *kíek* ('how much, as much as').

4.3. Latvian *ik-*

The Latvian data seem to occupy a middle position between Lithuanian and Old Prussian. In the standard language the Latvian distributive marker *ik-* (in *ikviêns*) is isolated, but older lexicographical sources mention the fact that it can be used, particularly in the archaic language of the Latvian folksongs, as a conjunction 'how much, how often' (ex. 56):

(56) Latvian (folksong)

> *Ik* *dʃeeʃmiɲu* *iʃdʃeedaju*
> **how.many** song.GEN.PL. sing.PST.1SG
> *Ṣatin'* *dʃeeʃmu* *kamolâi*
> tangle.PST.1SG songs.GEN.PL ball.LOC.SG
> 'Whenever I sang songs, I wound them in the ball of songs.'
> (lit. 'As many songs as I sang…') (K. Baron & H. Wissendorff,
> *Latwju dainas*, BW, 1894, 47)

It is often associated with a second *ik* 'so much, so often' in a correlative system (ex. 57):

(57) Latvian (folksong)

> *Ik* *es* *gahju* *gar* *kapeem,*
> **as.much** 1SG.NOM go.PST.1SG. along grave.DAT.PL
> *Ik* *es* *gauʃchi* *noraudaju.*
> **as.much** 1SG.NOM bitterly.ADV weep.PST.1SG
> 'Whenever I went along the graves, I always wept bitterly.' (lit.
> 'As often as I went along the graves, so often I wept bitterly.')
> (K. Baron & H. Wissendorff, *Latwju dainas*, BW, 1894, 4044)

A striking usage, mentioned by ME (1923–1925, i 702), is when, in a correlative system, the predicate of the subordinate clause is an appositional participle in *-dams* (ex. 58):

(58) Latvian (folksong)

> *Ik* *kanniɲu* *iʃneʃdama,*
> **as.much** water.jug.ACC.SG carry.away.PTCP.NOM.SG.F

Ik *dſeefmiɳu* *padſeedaju.*
as.much songs.GEN.PL sing.PST.1sg
'Whenever I carried away the water jug, I always sang songs.'
(lit. 'As often as I carried away the water jug, so often I sang
songs.') (K. Baron & H. Wissendorff, *Latwju dainas*, BW, 1894,
792)

These usages make it possible to incorporate the form *ik* into the wider
category of the adverbial quantifiers ending in *-ik* in Latvian: *cik* 'how
much' (interrogative and conjunctive) and *tik* 'so much' (demonstrative).[23]
The two latter forms, *cik* and *tik*, can be combined in a correlative system
(ex. 59):

(59) Latvian
Cik *zvaigžņu* *debesīs,* ***tik*** *caurumu*
how.many star.GEN.PL heaven.LOC.PL **so.many** holes.GEN.PL
zemē.
earth.LOC.SG.
'As many stars as there are in the heavens, so many holes are
there in the earth.' (ME, 1923–1925, ii 380)

Cik can also be used with a temporal meaning ('how often'), with or with-
out the correlative *tik* ('so often'). An example without correlative is (60):

(60) Latvian (folksong)
Zik *es* *gahju* *maltuwê,*
how.often 1SG.NOM go.PST.1SG granary.LOC.SG
Pa *weenai* *ritinaju.*
PREP.DISTR one.DAT.SG.F roll.PST.1SG
'Whenever I went to the granary, I rolled them [the songs].' (lit.
'As often as I went to the granary...') (K. Baron & H. Wissen-
dorff, *Latwju dainas*, BW, 1894, 29, variant)

It is striking that *cik* in (59) and (60) has exactly the same meaning as *ik*
in (57–58). One of the problems we are facing is the distribution of the
different forms. Judging from the evidence provided by the Latvian folk-
songs, the system presents the following configuration:

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[23] See Gāters (1993, 490–491 and 503–504).

Table 3. The distribution of cik, ik

Interrogative	'how much', 'how often'	*cik*
Conjunctive	'as much as', 'as often as'	*cik* or *ik*
Correlative	'so much, so often'	*tik*, rarely *ik*
Demonstrative, intensive	'so much, so often'	*tik*

Ik is chiefly used as a conjunctive adverb ('as much as'), but also as a correlative ('so much'), and in both cases it is challenged by another form, the conjunction *cik* and the correlative *tik*. We certainly must not conclude from this that there is no systematic rule regarding the distribution of the different forms. Rather, we will assume that this unstable picture is due to the coexistence of archaic and modern forms of correlation, and our task will be to establish their chronological position as precisely as possible.

Before we do that, there are still two important points to mention. The first one is that the adverb *ik* has dialectal variants, one with an additional ending *ikãm* 'while, until' (conjunction, cf. 'während, solange als', 'bis', in ME, 1923–1925, i 704), and another one with a different stem and a different ending *iêkam* and *iêkãm* 'before', 'until' (conjunction, cf. 'bevor, ehe', 'solange, bis', in ME, 1925–1927, ii 24 and 26). The addition of *-ãm* is not surprising. The same ending occurs in other adverbs too, cf. Latv. *grūžãm* 'abundantly', *kuõpãm* 'together', *klusãm* 'silently, quietly', *pruôjãm* 'away, off'.[24] It is probably an old instrumental feminine plural (cf. Latv. *kãjãm* 'by feet' from *kãja* 'foot'), cognate with Lith. *-om*, which has the same origin (cf. Lith. *dovanõm* 'gratuitously, vainly' from *dovanà* 'present, gift'). As regards the stem variation *ik- / iek-*, it is not limited to the conjunctive-correlative stem, but appears more widespread within the correlative system: beside *cik* 'how much, how often', there is a dialectal variant *ciêk* (ME, 1923–1925, i 392, cf. also *ciekãm*); beside *tik* 'so much, so often' and *tikai* 'only', we have *tiek* (ME, 1929–1932, iv 209, cf. also *tiêkãm*).

The second point, which derives from the first one, is that the Latvian forms have cognates in Lithuanian and Old Prussian with partly similar,

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[24] Examples from Forssman (2003, 336–340).

partly diverging meanings. In Old Prussian there is a conjunction *ikai* attested with two meanings, 'if' (ex. 61):

(61) Old Prussian

Bhe **ickai** *ainonts* *ēnſtan* *turīlai*
and **if** somebody.NOM.SG.M in=that.ACC.SG have.OPT.PRS.3
preiwaitiat / ſtas *ſegē* *ſtan* *en kērdan.*
to=speak.INF 3.NOM.SG.M does.PRS.3. that.ACC.SG in time.ACC.SG
'And, if anyone has anything to say about that [about that marriage], he should do it in time.' = German: *Vnd hat jemands darein zu ſprechen / der thue es bey zeit.* (*Enchiridion*, 1561, iii 99₁₁)

and 'though, although' (ex. 63):

(62) Old Prussian

Bhe **ikai** *mes* *ſenſteſmu* *ankaitītai*
and **though** 1PL.NOM with=that.DAT.SG attacked.ADV
wīrſtmai / *kai mes* *enwangan augaunimai /*
become.PRS.1PL that 1PL.NOM finally.ADV succeed.PRS.1PL
bhe ſtan *epwarrīſnan* *polāikumai.*
and the.ACC.SG victory.ACC.SG achieve.PRS.1PL.
'and that, though we are attacked by that [the sin], we may finally succeed and win.' = German: *Vnd ob wir damit angefochten wůrden / das wir doch endlich gewinnen vnd den ſieg behalten.* (*Enchiridion*, 1561, iii 55₂₂)

The concessive meaning 'though, although' in (62) is probably due to the polysemy of the German original *ob* 'if' and 'though'; the proper meaning of *ikai* was only 'if'. One may note that the German conjunction *so* could also have this conditional meaning ('if'), which could eventually lead the translator to misuse *ikai* as an equivalent to German *so* even as a demonstrative adverb ('so, this way'): this is obviously the case in iii 93₁₅, where *ikai* incorrectly renders German *so* 'so, this way'. In spite of these mistakes, we may safely assume that the basic meaning of *ikai* was 'if' (conditional conjunction) in Old Prussian. A comparison with Latvian *ik* can only make sense if one assumes for Old Prussian an underlying meaning 'as far as, to the extent that' > 'if'. This is a plausible reconstruction, but the details of the semantic evolution will need to be further elaborated.

There is in Lithuanian a cognate form *ikì* (or *ik*) which presents a basic meaning 'until' realised in three different constructions. In the standard language, it is regularly a preposition introducing a noun in the genitive, both in a spatial and in a temporal meaning (ex. 63–64):

(63) Modern Lithuanian
palydéti   ikì   stotiẽs
accompany.INF **until   station.GEN.SG**
'to accompany to the station' (Žindžiūtė Michelini 2007, 141)

(64) Modern Lithuanian
dìrbti   ikì   vãkaro
work.INF **until   evening.GEN.SG**
'to work until the evening' (Žindžiūtė Michelini 2007, 141)

In Old Lithuanian (e.g. Bretkūnas, Daukša, Sirvydas, but not Mažvydas) and in a handful of modern dialects of the eastern zone, the case of the object of the preposition is not the genitive, but the dative (ex. 65):[25]

(65) Old Lithuanian
bat' iſʒkaktų̃   /   nẽ̊t' ik   bútái   tàwai
but go.COND.PRS.3 even **until   home.DAT.SG your.DAT.SG**
'But he would go even to your home.' = Polish: *ale doszedł aż do przybytku twego.* (Mikolajus Daukša, *Kathechismas*, 1595, 163₂)

More rarely, *ikì* can be a prepositional adverb, introducing a preposition and its object (ex. 66):

(66) 19th century East Prussian Lithuanian
Ir   bóba   dabàr toliaús éjo   ikì
and old.woman.NOM.SG now   further go.PST.3 **until**
į̃   rugiùs.
to rye.field.ACC.PL
'And now the old woman went further to a rye field.' = German: *Die Alte gieng nun weiter bis zu einem Kornfelde* (cf. Schleicher 1857b, 52)(August Schleicher, *Litauisches Lesebuch und Glossar*, 1857a, 162)

This usage seems to have been limited to the Lithuanian dialects of East Prussia, which could point to a German model (*bis zu, bis nach*, etc.).

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[25] Cf. Ambrazas (2006, 295). Note in the example (65) the use of *nẽ̊t'* 'even, until' before *ik*, corresponding to Polish *aż do*.

Second, *ikì* was used in Old Lithuanian as a conjunction 'until' followed by a subordinate clause with the verb in the indicative (ex. 67):

(67) Old Lithuanian

*Nėſa dar ilgs   Paʒigys,   **ikki** wėl Waſarelę*
for   still long.NOM.SG.M step.NOM.SG **until** again summer.ACC.SG
ſuláukſim'.
reach.FUT.1PL
'For there is still a long step until we reach the summer again.'
(Kristijonas Donelaitis, *Metai, Ziemos rupesčiai*, ca 1780, 600)

or introducing a subordinating conjunction *kõl* and *kõlei* 'until how far' (ex. 68):

(68) 19th century Lithuanian

Tik   nieko   nepradėk   dirbti,
only   nothing.GEN.SG NEG. = begin.IMP.2SG work.INF
iki   kol   aš   ateisiu.
until how.far 1SG.NOM arrive.FUT.1SG.
'Do not begin to do any work, until I arrive!' (Jonas Basanavičius,
Lietuviszkos pasakos, 1898, i 169, cf. LKŽ, 1957, iv 29)

Third, *ikì* can be used as an adverb accompanying a gerundive, which can be in an absolute construction (ex. 69):

(69) Old Lithuanian

***ikki** Dienai   iſʒillus*
until day.DAT.SG warm.up.GER.PST.
'until the days warmed up' = German: *biß der Tag heiß ward.* (Jacob Brodowski, *Lexicon Germanico = Lithuanicum et Lithuanico = Germanicum*, i 263 [18th century])

If we try to summarise, the diversity of the functions of *ikì* can be reduced to three main constructions: (1°) introducing a noun phrase (*ikì* preposition); (2°) introducing a subordinate clause (*ikì* conjunction); and (3°) introducing a converbial (gerundive) construction (*ikì* adverb). The question is which one of these three possibilities can be compared with the cognate forms in Latvian (*ik* 'how much, as much as') and Old Prussian (*ikai* 'if'). A rather superficial answer would be that the original function of *ikì* was that of a conjunction ('until + VERB'), corresponding to the

Latvian and Old Prussian conjunctions. But this would leave us with three unanswered questions:

1. A first question is how to integrate *ik- into the correlative system where *i(e)k- is opposed to *ti(e)k- and *ki(e)k-.

2. A second question, deriving from the first one, is how to establish the precise meaning of *ik- and to derive from this meaning the three diverging outcomes: Lith. *ikì* 'until', Latv. *ik* 'how much', Old Prussian *ikai* 'if'.

3. A final question is which meaning is at the basis of the Latvian distributive pronoun *ik-viêns* and whether we have to assume a similar derivational pathway for Lithuanian *kiekvíenas* and Old Prussian *erains*.

5. The correlative system: formal problems

Working on the assumption that the original function of *ik- is conjunctive, we are faced with the problem of its position within the correlative system and of its relationships to the other forms attested in the individual languages. In fact, this problem is much more complex than expected and we are not sure of being able to provide a definitive solution.

Let us start with a rather marginal issue, the ending of *ik-. In Lithuanian there are two variants: *ikì* (in the standard language and in older texts) and *ik* (in some older texts and in some dialects). It is not proven, but not impossible, that *ik* is a secondary shortening of *ikì*. In any case, a prototype *iki cannot be the source of the Latvian cognate form *ik*, since a final vowel *-i* would have palatalised the preceding consonant in this language (*iki > *ic, cf. Latv. *acs* 'eye' from *akis, Lith. *akìs*). Latvian *ik* is usually traced back to *ikă, and it is possible that Lithuanian *ik* goes back to the same source, which would imply regarding the ending *-i* of *ikì* as an internal innovation in Lithuanian, probably due to the influence of the synonym *ligì* 'until' (cf. Latv. *līdz* from *līgi). In Old Prussian, the ending of *ikai* may admit three different interpretations. It could be a remaking of the original ending *ikă by analogy to the productive class of adverbs in *-ai.*[26] A short form *ik (from *ikă) is probably found in the isolated sequence *iquoitu* 'if you want' (iii 79$_9$), *iquoi tu* (iii 81$_9$), which also appears

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[26] Compare the variant in Latvian *ciki* 'how much' (ME, 1923–1925, i 380) from *kik-ai beside *cik* from *kik-ă. In a different way, Endzelīns (DI, 1980, iii$_2$, 58 < 1932) interprets OPr. *ikai, ickai* as *īkai, which I find rather unconvincing.

in the second line of the Basel epigram: *Eg.koyte.poyte*, interpreted as **ik kwai tu pōtwei* 'if you want to drink'. According to a second interpretation, Old Prussian *ikai* could reflect a combination **ik + kai* 'every time when, whenever' (with the conjunction *kai* 'when'): this view was first proposed by Berneker (1896, 294). This supposes that **ik* has a distributive meaning; the problem is that this meaning would be confined, in Old Prussian, to the combination with the conjunction **kai*, which seems difficult to motivate. A third possibility would be to compare the ending of *ikai* with that of Lithuanian *taĩ* 'that'. In any case, the most likely prototype for the three Baltic languages is **ikă*.

The same reconstruction can be proposed for all the cognate forms involved in the correlative system:

Table 4. Reconstruction of the correlative system

		i-vocalism	*ie*-vocalism
Interrogative and conjunctive	'how much', 'how often'	**kikă* > Latv. *cik*	**kiekă* > Lith. *kíek*, Latv. (dial.) *ciêk*
Conjunctive	'as much as', 'as often as' (> 'until')	**ikă* > Latv. *ik*, Lith. *ik* (Lith. *ikì*, Old Pr. *ikai* with new endings)	**iekă* > Lith. (dial.) *íek* or *jíek* (Latv. dial. *iêkam* with a new ending)
Demonstrative	'so much', 'so often'	**tikă* > Latv. *tik* (Lith. *tìk*, Latv. *tikai* 'only')	**tiekă* > Lith. *tíek*, Latv. (dial.) *tiêk*

There appear to be vestiges of the ending *-a* in some Lithuanian dialects, where we find *kíeka* and *tíeka* instead of *kíek* and *tíek*,[27] especial-

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[27] See the references in LKŽ (1959, v 745 and 1995, xvi 173). Cf. also Bezzenberger (1877, 71) with instances from Old Lithuanian literature.

ly in combination with a particle, e.g. Old Lith. *kiékaġ* (Daukša, *Postilla Catholicka*, 1599, 293$_{40}$)[28] and Lith. dial. *tiekajaũ* beside *tiekjaũ* (with *jaũ* 'already').[29] Historically, this ending *-ă* is likely to reflect the thematic neuter ending *-a* (< PIE *-od?); neuter forms are frequent among multivalent quantifiers, as shown by the parallel of Lithuanian *mãža*, Latvian *maz* 'few' (< substantivised neuter of the adjective Lith. *mãžas*, Latv. *mazs* 'small, little').

A second issue, to which there is no completely satisfactory answer, is the variation of vocalism between *-i-* and *-ie-*. Generally speaking, it appears to be the case that the short vowel *-i-* predominates in Latvian (*cik, ik, tik*), the diphthong *-ie-* in Lithuanian (*kíek, tíek*), but *-i-* is regular both in Latvian and in Lithuanian for *ik- (Latv. *ik*, Lith. *ikì*), and this is corroborated by Old Prussian (*ikai*). Interestingly, Lithuanian has both *tíek* 'so much' and *tìk* 'only' (< 'so much, not more'). On the other hand, there are Latvian dialects that have traces of *-ie-* (Latv. dial. *ciêk* < *kiekă, *tiêk* < *tiekă and *iêkam* < *iekă + ending *-ăm*). The coexistence of *-i-* and *-ie-* is usually explained by assuming that *-i-* represents a proclitic shortening of *-ie-*: e.g. *tíekă > (proclitic) *tikă.[30] The problem is that such a shortening is not regular in the Baltic languages. Shortening may occur in final position both in Lithuanian (by virtue of Leskien's law) and in Latvian (by virtue of the moraic shortening law), but not in non-final position. Proclitic shortening has been assumed by some scholars to account for the distinction of prefixes (e.g. Lith. *príe-* in *príedanga* 'cover, screen, shelter') and preverbs (e.g. Lith. *pri-* in *prideñgti* 'to cover, to shelter'),[31] but this assumption has nothing to recommend it. For one thing, it is not clear why preverbs should be more proclitic than prefixes. Furthermore, it can be shown that the formal distinction of prefixes and preverbs reflects different chronologies of univerbation. To put it simply, I assume that prefixes were associated with the nominal stem before Leskien's law (as a result, *príe-NOUN was not in final position, hence not affected by the law), whereas preverbs were associated with the verbal stem later, after Leskien's law (as a result, *príe# > *prì# in final position, then

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[28] Cf. Otrębski (1956, iii 160, § 377).

[29] Cf. lкž (1995, xvi 176).

[30] Cf. Fraenkel (lew, 1962 i 250).

[31] Endzelīns (di, 1972, i 504–509 < 1909), followed by Fraenkel (1929, 29, 102) and Zinkevičius (1981, i 186).

pri-VERB): this implies that PIE tmesis survived longer in verbal than in nominal formations, which is exactly what we find in Hittite, Homeric Greek and Vedic.[32] If this is correct, we cannot apply the same analysis to the contrast between **kíekă, *tíekă, *íekă* and **kikă, *tikă, *ikă,* since the parameter of univerbation cannot have played any role whatsoever to explain the shortening in the forms with *-i-* in contrast to those with *-ie-*. My claim is that a purely phonological explanation is unable to account for the variation between *-i-* and *-ie-*.

The solution, I think, can be found in the realisation of the correlative system in the Baltic quantifiers, and this brings us to the question of the position of **ik-* in this system. From an Indo-European perspective, there is no doubt that the initial consonant **k-* in **kikă* (> Latv. *cik*) and **kiekă* (> Lith. *kíek*, Latv. dial. *ciêk*) reflects the PIE interrogative and conjunctive stem **kʷo-* (cf. Lith. *kàs*), whereas the initial consonant **t-* in **tikă* (> Latv. *tik* and *tikai*, Lith. *tìk*) and **tiekă* (> Lith. *tíek*, Latv. dial. *tiêk*) reflects the PIE demonstrative stem **to-* (cf. Lith. *tàs*). Since Minard (1936) and others, it is usually admitted that the regular word order pattern in the correlative system was in Indo-European [SUBORDINATE CLAUSE + MATRIX CLAUSE] (Minard's *diptyque normal*). In this case, this leads us to reconstruct the following pattern:

[SUBORDINATE **kikă, *kiekă* + DEMONSTRATIVE **tikă, *tiekă*]

There is plenty of evidence showing that this pattern is not only inherited, but also still synchronically the most frequent one in the Baltic languages, cf. *kíek...tíek* in Lithuanian (ex. 55 above) and *cik...tik* in Latvian (ex. 59 above). In this pattern, the correlative system is characterised by two major features:

1. The two correlative forms differ by their initial consonants (subordinate **k-*, vs. demonstrative **t-*).
2. Apart from the initial consonants, the two correlative forms have parallel endings (**kikă,* vs. **tikă* or **kiekă,* vs. **tiekă*).

Both features are so obvious that they are often taken for granted, as indisputable elements of Indo-European reconstruction. But correlation is a much wider issue and cannot be reduced to these formal features. To be-

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[32] More details are given in Petit (2011, 259–263).

gin with, there are different forms of correlations, some of which consist in echo-reduplication of the same stem, cf. Italian (ex. 70):

(70) Italian
Tale   *padre*   **tale**   *figlio.*
such.sg father.sg **such.sg** son.sg
'Like father like son.'

contrasting with its Latin source (ex. 71):

(71) **Qualis**   *pater*   **talis**   *filius.*
which.sg father.sg **such.sg** son.sg
'Like father like son.' (Late Latin: Athanasian creed)

Following Haudry (1973, 179), we will call the first type of correlation (Ital. **tale** *padre* **tale** *figlio*) 'anaphoric correlation', the second type (Lat. **qualis** *pater* **talis** *filius*) 'conjunctive correlation'. Conjunctive correlation predominates in Baltic, but there are also a few traces of anaphoric correlation, as shown by instances of reduplication of *ik* in the Latvian folksongs (ex. 57, repeated below as 72):[33]

(72) Latvian (folksong)
Ik   *es*   *gahju*   *gar*   *kapeem,*
as.much 1sg.nom go.pst.1sg along grave.dat.pl
Ik   *es*   *gauſchi*   *noraudaju.*
as.much 1sg.nom bitterly.adv weep.pst.1sg
'Whenever I went along the graves, I always wept bitterly.' (lit. 'As often as I went along the graves, so often I wept bitterly.') (K. Baron & H. Wissendorff, *Latwju dainas*, bw, 1894, 4044)

One has the impression that the two systems of correlation coexisted side by side in Baltic, with a clear preference for conjunctive correlation and only a limited representation of anaphoric correlation. At this point, there is no need to transpose this coexistence into chronological terms, for example by assuming that anaphoric correlation is necessarily more ancient than conjunctive correlation, as Haudry (1973) does; the reverse can equally be true. In this matter, no binding directionality can be established with certainty.

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[33] There are very rare examples of anaphoric correlation with Latv. *cik...cik* as well (cf. me, 1923–1925, i 380).

As a rule, the two members of the correlative system have parallel endings (cf. Lith. *kíek...tíek*), but there is no necessity there and the system can operate without that. For example, we have parallel endings in Latvian *kur...tur* 'where...there', but different endings in Lithuanian *kuř...teñ* 'where... there'. Formal discrepancy does not represent a real obstacle to the recognition of a correlative system, functioning as a kind of distance syntactic relation. In a recent paper (2013) I have proposed calling 'balanced correlation' the type illustrated by Latvian *kur...tur*, 'unbalanced correlation' that illustrated by Lithuanian *kuř...teñ*. This terminology must not mislead us into treating unbalanced correlation as fundamentally different from balanced correlation: the essence of the phenomenon is the same, only its surface realisation differs.

With this in mind, one can posit four logical subcategories of correlation:

Table 5. Types of correlational systems

	Conjunctive correlation (different stems = DS)	Anaphoric correlation (same stem = SS)
Balanced correlation (same ending = SE)	Latv. *kur...tur* (DS + SE)	Latv. *ik...ik* (SS + SE)
Unbalanced correlation (different endings = DE)	Lith. *kuř...teñ* (DS + DE)	— (SS + DE)

As far as I know, there is no example in Baltic of the fourth possibility, with the same stem, but a different ending. This is probably due to the fact that anaphoric correlation is usually realised as a *complete reduplication*. Only typological research could confirm that this pattern [SS + DE] is excluded from the system. If this is true, this suggests that anaphoric correlation is fundamentally an echo-reduplication, whereas conjunctive correlation is a different phenomenon, where echo is not the determining factor and may even be completely absent. These preliminary observa-

tions do not make a consistent theory of correlation: they only seek to provide guidance on the different types of formal relationships within this system.[34]

Balanced conjunctive correlation, with different stems, but the same ending [DS + SE], is the only regular type in Baltic (Lith. *kíek...tíek*), but there is evidence for diverging realisations of correlation. Recently (2013) I have tried to show that the temporal correlation illustrated by Lith. *kadà...tadà* 'when...then' replaced a more archaic correlation **jadā́n...*idā́n* 'when...then'; its second member is the source of Old Lith. *idánt* 'so that, in order to', originally a temporal adverb reanalysed as purposive conjunction. Historically, there is ground for assuming that the PIE conjunctive stem **kᵘo-* (originally interrogative-indefinite) replaced in the conjunctive functions an older stem **(H)i̯o-*, which is still preserved as a relative-conjunctive stem in Greek ὅς, Sanskrit *yás* and Old Church Slavonic *иже* (< **(H)i̯os + *ĝe*) 'who'. In Baltic, the stem **ja-* is now rare in conjunctions (cf. however Lith. *jóg* 'that', *jéi* 'if', Latv. *ja* 'if') and was regularly replaced by **kᵘo-* (cf. Lith. *kàd* 'that', *kadà* 'when', *kur̃* 'where', etc.). As to the demonstrative stem, it can be argued that **to-* was competing in Indo-European with other anaphoric stems, notably with **Hi-*, which is still preserved in Sanskrit *ayám*, Latin *is*, Gothic *is* and, last but not least, Lith. *jìs* 'this one, he'.

On this basis, one could propose the following scenario. The correlative pair **kiekă...*tiekă* regularly attested in Lithuanian (parallel to **kadā́n...*tadā́n*) is likely to be an innovation having replaced an older form of correlation, which I would tentatively reconstruct as **jiekă...*ikă* (parallel to **jadā́n...*idā́n*). The ultimate origin of these forms **jiekă...*ikă* is still uncertain, but what seems to be clear is that **jiekă* originally belonged to the PIE conjunctive stem **(H)i̯o-*, whereas **ikă* belonged to the PIE anaphoric stem **Hi-*. It is often said that these two PIE stems merged in Balto-Slavonic and it is true that we are often unable to make a clear distinction between them. For example, in the comparative correlation of the type Latv. *juõ vaĩrâk...juõ vaĩrâk* 'the more...the more', it can be the case that the first form derives from **(H)i̯o-*, the second from **Hi-*, but, synchronically, we are dealing with an instance of anaphoric correlation.

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[34] A further complication is that 'comparative correlation' is more frequently realised anaphorically (e.g. Latv. *juõ vaĩrâk...., juõ vaĩrâk* 'the more..., the more') than other kinds of correlation. In many respects, it has to be treated separately.

What is important here is that, whereas this pattern *jiekă...*ikă survived in a fragmentary way in Baltic, the functional distinction of which it was the bearer (*jiekă conjunction / *ikă anaphoric) was lost. The distribution of the vocalism became random and inconsistent, unpredictably scattered in the individual dialects: some dialects tended to generalise -ie- (ie-dialects), others -i- (i-dialects), uniformly for the conjunctive and for the anaphoric functions. In Lithuanian -ie- has prevailed, restricting -i- to a few marginal forms; in Latvian, on the contrary, it is -i- that predominated. From an initial state of affairs, in which *jiekă was conjunctive and *ikă anaphoric, there developed new stages in which the same form, *jiekă in the ie-dialects, *ikă in the i-dialects, is used both as a conjunction and as its anaphoric correlate. The result was a uniform pattern, either *ikă...*ikă or *jiekă...*jiekă. The final step of this scenario is the restoration of a conjunctive correlation opposing *ka- in the conjunctive function and *ta- in the demonstrative function, with different outcomes depending on the previously acquired generalisation of -i- or -ie- in the individual languages:

Stage I		*jiekă	/	*ikă
		(> Lith. dial. jiek-)		(> Lith., Latv. ik)
Stage IIa (i-dialects)		*ikă	/	*ikă
		↓		↓
		*kikă	/	*tikă
		(> Latv. cik)		(> Latv. tik)
Stage IIb (ie-dialects)		*jieka	/	*jiekă
		↓		↓
		*kieka	/	*tieka
	(> Lith. kíek, Latv. dial. ciêk)		(> Lith. tíek, Latv. dial. tiêk)	

As can be seen, this analysis supposes that the Baltic languages have undergone an intermediate stage of anaphoric correlation (either *ikă...*ikă or *jiekă...*jiekă), resulting from the merging of *jiekă and *ikă. The further evolution of the Baltic languages can be described as a restoration of a conjunctive correlation *kikă...*tikă (Latvian) or *kiekă...*tiekă (Lithuanian).

The advantage of this hypothesis is that it enables us to understand why there are traces of i-vocalism in the ie-dialects: Lith. ik and ikì 'until', tìk 'only' (in contrast to tíek 'so much'). These traces are vestiges of the former coexistence of the two vocalisms after the loss of their functional distinction. One may assume that, once the conjunctive-anaphoric dis-

tinction was blurred in the correlation of quantifiers, the two forms *jiekă and *ikă came to be used indifferently. Lith. ik and ikì, if they reflect a conjunction 'as much as' as in Latvian, can illustrate this stage of indistinction. Likewise, even in the ie-dialects, there existed beside *tiekă a form *tikă. At each stage, a selection was made, which led to the inclusion of one form into the living correlative system and to the marginalisation of the other form to peripheral functions.

There are still many dark areas in this scenario, and it would be easy to dispute its validity. The important point is that, even if we claim an original functional distinction between the i- and the ie-vocalisms, this distinction was early lost: *ikă was originally anaphoric, but came to be used beside *jiekă as a conjunction, before the replacement of both of them by a more canonical form of correlation, *kikă...*tikă or *kiekă...*tiekă. From there, each Baltic dialect went its own way: the formal diversity observed in the individual languages depends on the vagaries of their history.

6. The meanings of *ikă

The foregoing discussion had an unexpected result. Whereas the Baltic evidence points to an originally conjunctive meaning of *ikă 'as much as', the formal scenario sketched above led us to reconstruct its original meaning as anaphoric 'so much', in contrast to *jiekă 'as much as'. This should not be surprising for us, since the older form of correlation (*ja-...*i- from PIE *(H)i̯o-...*Hi-) was immediately subject to the overall merger of these two stems in Balto-Slavonic and to the loss of functional distinction between the two vocalisms (-i- and -ie-). There is thus no contradiction between the formal etymology of *ikă, which points to an anaphoric, and its immediate functional prehistory, which points to a conjunction. Now the question is whether the different meanings of *ikă in the Baltic languages are all reducible to a conjunctive meaning ('as much as') or some of them may eventually go back to the more ancient anaphoric meaning.

In Latvian, the function of *ikă is conjunctive ('as much as, as often as') and it is likely that the same holds true for Old Prussian ikai 'if' as well. For Old Prussian, it is only necessary to assume that the conditional meaning 'if' arose from a quantitative meaning 'as much as, to the extent that':

*ikă 'as much as', 'inasmuch as'

Latvian ik 'as much as'   Old Prussian ikăi 'inasmuch as' > 'if'
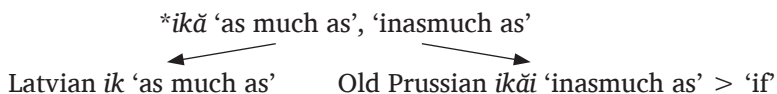
There are parallels for a semantic link between supposition and quantification, e.g. Old Russian *коли*, Ukrainian *коли*, Belorussian *калі* 'if' < 'inasmuch as' (cf. Serbo-Croatian dial. *kòli*, Slovenian *kòli* 'however much'); Polish *o ile* 'as far as, if' < 'inasmuch as'; French *pour autant que* 'if, as long as'; German *insoweit* 'as long as, as far as'.

Both Latvian and Old Prussian thus invite us to reconstruct a conjunction **ikă* 'as much as', in contrast to Lithuanian, where we find a preposition and conjunction *ikì* 'until'. It is crucial for our perspective to account for this semantic divergence, since it resurfaces in the formation of the distributive pronouns, where Old Prussian has *erains* from *er* 'until', whereas Lithuanian has *kiekvíenas* from *kíek* 'how much, as much as'. In this respect, as already said, Latvian occupies a middle position between Old Prussian and Lithuanian.

The first thing to note is that there are across languages many function words that can be employed both as prepositions and as clause linkers. In English, for example, *after*, *before*, *since*, *until* and *till* can introduce noun phrases (prepositions) or subordinate clauses (conjunctions) without any formal difference. The meaning 'until', describing the access to the most remote position, is particularly liable to this syntactic ambivalence (compare 73 and 74):

(73) English
　　　*He resided there **until** his death.*
　　　(*until* = preposition)
(74) English
　　　*He resided there **until** he died.*
　　　(*until* = conjunction)

The same ambivalence is found in other languages as well, often realised as a tripartite distinction: preposition (+ noun phrase); prepositional adverb (+ preposition + noun phrase); conjunction (+ subordinate clause). In Ancient Greek, for example, μέχρι displays these three functions, preposition (ex. 75), prepositional adverb (ex. 76), conjunction (ex. 77):

(75) Ancient Greek
　　　Παρετέτατο　　　δὲ　ἡ　　　　　τάφρος　　[...]
　　　extend.PLUPF.3SG　PTC　the.NOM.SG.F　trench.NOM.SG
　　　μέχρι　τοῦ　　　　Μηδίας　　　τείχους.
　　　until　the.GEN.SG.N　Media.GEN.SG　wall.GEN.SG

'This trench extended up to the wall of Media.' (Xenophon, *Anabasis*, 1, 7, 15)

(76) Ancient Greek

Ἐδίωξαν **μέχρι** εἰς τὸ στρατόπεδον.
pursue.AOR.3PL **until** into the.ACC.SG.N camp.NOM.SG
'They pursued them up to the camp.' (Xenophon, *Anabasis*, 6, 4, 26)

(77) Ancient Greek

Ταῦτα ἐποίουν **μέχρι** σκότος
these.ACC.PL.N do.IMPF.3PL **until** darkness.NOM.SG
ἐγένετο.
come.on.AOR.3SG
'They kept this up until darkness came on.' (Xenophon, *Anabasis*, 4, 2, 4)

We find the same ambivalence in Greek ἕως 'until' and, on its model, in Armenian *minč'ew* 'until'. In German *bis* can be both a conjunction (e.g. *bis er kommt* 'until he comes') and a prepositional adverb (e.g. *bis an den Ort* 'up to the place'); as a preposition, *bis* is sporadically attested until the 19th century (*bis* + ACC., e.g. *bis Berlin* 'to Berlin', *bis diesen Augenblick* 'up to that time'), but it is now recessive and limited to a few contexts (e.g. with a temporal meaning *bis Sonntag* 'until Sunday').[35]

Historically, the direction of change is not unilateral. We have as many examples of prepositions becoming conjunctions (P → C) as of conjunctions becoming prepositions (C → P). In Ancient Greek μέχρι is originally a preposition (grammaticalised from a collocation **me ĝʰsri* 'in the hand', cf. Arm. *merj* 'near'), but it came to be used secondarily as a conjunction. On the other hand, ἕως is originally a conjunction (cf. Sanskrit *yā́vat* 'as far as, as long as'), but it came to be used secondarily as a preposition. The Baltic evidence points to an original conjunction **ikă* 'as much as', which implies that the prepositional use ('until') is secondary. It can therefore be assumed that the conjunction **ikă* is the source of the Lithuanian preposition *ikì* 'until', and we do not need to look for a different origin, for example by postulating an etymological relationship to Lat. *aequus* 'equal'[36] or a deformation of **lykì* 'until' deriving from a

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[35] See Paul (1920, 54, § 307).

[36] Cf. Bezzenberger (1901, 166).

Germanic loanword.[37] But we still have to explain the semantic evolution and to describe the functional process which, from a conjunction, gave rise to a preposition.

To begin with the semantic aspect, it is striking that the telic meaning 'until' is often associated with, or even seems to derive from, a durative meaning ('as long as, while'). The two meanings are very close to each other. 'Until' describes a pathway that ends in a final landmark: it supposes the completion of a linear course up to its extreme point. On the other hand, 'as long as, while' describes the progress of a course in a similar way, but without considering its final point. These are two different approaches to durativity, taking into consideration its completion or not and therefore connected with the aspectual properties of the verb: 'until' usually introduces a telic verb, 'as long as, while' a non-telic verb. It is therefore not surprising that the same formal expressions can be used with both meanings. In Ancient Greek, for example, the conjunction ἕως means both 'until' in reference to an end point (ex. 78) and 'as long as' in reference to a given length of time (ex. 79):

(78) Ancient Greek

Τούτου παρ' ὄχθας ἕρφ',
it.GEN.SG along bank.ACC.PL go.IMP.PRS.2SG
ἕως ἂν ἐξίκη / καταβασμόν.
until PTC reach.SBJV.AOR.2SG cataract.ACC.SG
'Go along its banks until you reach the cataract.' (Aeschylus, *Prometheus Bound*, 810)

(79) Ancient Greek

Οὔ μοι φόβου μέλαθρον ἐλπὶς
NEG 1SG.DAT fear.GEN.SG hall.ACC.SG hope.NOM.SG
ἐμπατεῖ, **ἕως** ἂν αἴθη πῦρ
tread.PRS.3SG **as.long.as** PTC kindle.SBJV.PRS.3SG fire.ACC.SG
ἐφ' ἑστίας ἐμῆς / Αἴγισθος.
on hearth.GEN.SG. my.GEN.SG.F Aegisthus.NOM.SG
'Hope does not tread for me the halls of fear, so long as Aegisthus kindles the fire upon my hearth.' (Aeschylus, *Agamemnon*, 1435)

This semantic contrast between telicity ('until') and durativity ('as long as') can be observed in other languages as well, and in each of these cases

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[37] Cf. Trubačëv (1970, 544–546).

the role of verbal aspect is conspicuous. In Serbo-Croatian, for example, *dok* means 'as long as, while' when followed by an imperfective verb (ex. 80), 'until' when followed by a perfective verb (ex. 81):[38]

(80) Serbo-Croatian

I **dok** *je podnosila poniženja,*
and **as.long.as** be.PRS.3SG bear.PTCP.F.SG humiliations.ACC.PL

bila je blizu onih samoubilačkih
be.PTCP.F.SG be.PRS.3SG near these.GEN.PL suicidal.GEN.PL

pomisli.
thought.GEN.PL

'And as long as she was suffering humiliations, she was near to these suicidal thoughts.' (Mirko Kovač, 1938–2013, *Vrata od utrobe*, 1978)

(81) Serbo-Croatian

I čekamo **dok** *dobijemo.*
and wait(IPFV).PRS.1PL **until** obtain(PFV).PRS.1PL

'And we wait until we obtain it [money].' (Ante Kovačić, 1854–1889, *Idila Kraj Ljubljane*, 1877)

In the latter case, *dok* is regularly, but still optionally, followed in the modern language by the negative particle *ne*; its optionality makes it similar to an expletive negative.

In Latvian, we find the same polysemy with *kamȩ̃r* 'as long as, while' (ex. 82) and 'until' (ex. 83):

(82) Latvian

Viņš lasīja grāmatu, **kamēr** *bērni*
3.NOM.SG.M read.PST.3. book.ACC.SG **while** child.NOM.PL

rotaļājās.
play.PST.3.REFL

'He was reading a book while the children were playing.' (*Latviešu valodas vārdnīca*, 1987, 356)

(83) Latvian

Lasīju, **kamēr** *atnāca māte.*
read.PST.1SG **until** arrive.PST.3 mother.NOM.SG

'I read, until my mother arrived.' (*Latviešu valodas vārdnīca*, 1987, 356)

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[38] Cf. Alexander (2006, 94) and especially Magner (1991, 291).

In a similar way, in the Latvian folksongs, the conjunction *ikãm* has the same two meanings 'as long as' and 'until' (ME, 1923–1925, i 704, 'während, solange als', 'bis'). In the literature, the coexistence of these two meanings has sometimes been analysed as evidence for the category of aspect outside the verbal system (cf. Alexander 2006, 94), but one could argue the other way round that verbal aspect, either overtly marked or semantically implied, is the basis that makes the polysemy of these conjunctions possible. To put it otherwise, aspect is not an internal property of these conjunctions, but a verbal property indirectly affecting the semantics of these conjunctions.

This analysis would require further discussion, but, as it stands, it can provide us with the missing link to understanding the evolution of a conjunction 'as much as' towards a conjunction and preposition 'until'. The conjunction **ikǎ*, from a purely quantitative meaning ('as much as'), developed temporal meanings, iterativity ('as often as') or durativity ('as long as'), and the last of these meanings, when associated with telic verbs, gave rise to a telic meaning ('until'):

QUANTITATIVE MEANING		DURATIVITY		TELICITY
'as much as'	>	'as long as'	>	'until'

The only open question at this stage is how a conjunction 'until' can become a preposition 'until'. The notion of 'conversion', first introduced by Sweet (1891, 38) in reference to the shift of a word from one part of speech to another one, is insufficient to account for the process at stake here, because it is too closely connected with 'zero derivation' (e.g. English *a bridge → to bridge*), which is something completely different from what we have here. Marchand (1969, 360) proposed distinguishing 'zero derivation' and 'conversion', reserving the latter for functional change. But, even with this restriction, this does not shed light on what actually happened in the shift from **ikǎ* 'until' (conjunction) to **ikǎ* 'until' (preposition).

There are in the typological literature other instances of prepositions that can be traced back to conjunctions. A classical example is provided by the Albanian prepositions *nga* 'from' and *te(k)* 'towards' originating from the conjunctions **(ë)n-ka* 'from where' and **te-ku* 'towards where'.[39] The functional shift is traditionally explained by means of an elliptical construction (ex. 84–85):

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[39] They are mentioned by Hagège (2010, 143). See Petit for an analysis (2015).

(84) Albanian

Vij   ***nga***   *lumi.*
come.PRS.1SG. **from** river.NOM.SG = DEF
'I come from the river.' (Newmark 1982, 289)

(85) Albanian

*Vij   ***nga***   *(ëshẗë)*   *lum-i.*
come.PRS.1SG **from.where** (be.PRS.3SG) river.NOM.SG = DEF
'I come from where the river (is).'

What makes the Albanian examples particularly interesting is that a feature of the original construction was preserved after the reanalysis of *nga* as a preposition, the extremely unusual construction of the preposition with the nominative (*nga* + NOM. 'from'). Another well-known example is the reanalysis of the conjunction *donde* 'where' as a preposition 'at, by' in South American Spanish (ex. 86):

(86) South American Spanish

Estoy ***donde*** *tú.*
I am **where** **you.SBJ**
'I am with you, at your home.'

In both cases, a conjunction was reanalysed as a preposition: 'from where the river [is]' > 'from the river' and 'where you [are]' > 'with you, at your home'. The role of ellipsis in this process is conspicuous, but this does not necessarily imply that the language preserves the possibility of nominal (non-verbal) sentences, which are ruled out both in Albanian and in South American Spanish. The suppression of the existential verb is not a precondition for the syntactic reanalysis; it is a result, not a cause.

These parallels provide a framework for accounting for the evolution of **ikă* 'until' (conjunction) > (preposition). But there are still some crucial details to clarify in this scenario. If one assumes that a structure **ikă* 'until [there is] + NOUN' was reanalysed as 'until + NOUN', one still has to explain the construction with the dative or with the genitive. An intuitive answer in this case could be that **ikă*, once reanalysed as a preposition, adopted by analogy the construction of its synonym **li̯gi* (Lith. *ligi*). The construction with the dative might thus be analogical in Lith. *ikì*, whereas the construction with the genitive results from the general elimination of the prepositional dative in favour of the genitive; other prepositions have undergone the same evolution (e.g. Old Lith. *prieg* + DAT > *prieg* +

GEN, Modern Lith. *priẽ* + GEN).[40] It remains to determine the origin of the dative construction for **lĭ̃gi*, but this is a different matter, which would require a specific investigation.

7. The rise of the distributive pronouns

What has been said so far leads to a clear-cut result. Regardless of its ultimate etymology, the particle **ikă* was a quantitative conjunction 'as much as, as long as' in the prehistory of the Baltic languages. It is as such directly reflected in Latvian, but was specialised in a conditional meaning 'if' in Old Prussian (*ikai*) and partly reanalysed as a conjunction and preposition 'until' in Lithuanian (*ikì*). There is thus a common source for the three reflexes attested in the Baltic languages. This reconstruction opens the door to an analysis of the function of *ik-* in the Latvian distributive pronoun *ikviêns*. Correlatively, this makes it possible to approach the issue of the position of the other distributive markers in Lithuanian (*kiek-* in *kiekvíenas*) and Old Prussian (*er-* in *erains*).

The first step is the working assumption that **ikă* is the crucial piece in the formation of the distributive pronouns of the three Baltic languages and that *kiek-* in Lith. *kiekvíenas* and *er-* in OPr. *erains* derive, in one way or another, from this common source. The question is how a distributive pronoun can be traced back to a quantitative conjunction 'as much as, as long as'.

There are parallels to this evolution. The most striking one is provided by the Latin adverbs *quotannîs* 'every year' (Cicero +) and *quotîdiē* 'every day' (Cicero +) with its derivative *quotîdiānus* 'daily', cf. also *quot mensibus* 'every month' (Cato, *De Re Rustica*, 43, 2) and *quot kalendīs* 'on each returning Calends' (Plautus, *Stichus*, 60). These adverbs derive from the quantitative adverb *quot* 'how much, as much' ($<$ PIE **k^{u}oti*) in a way very similar to Latvian *ikdien* 'every day' from *ik* 'how much, as much as':

> (87) Latin *quotīdiē* 'every day'   ←   *quot* 'how much, as much as'
> Latvian *ikdien* 'every day'   ←   *ik* 'how much, as much as'

Interestingly enough, these formations are limited to temporal quantification, as in Latvian. The Latin distributive pronoun is *quisque* 'every', based

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[40] More data in Šukys (1978, 82).

on an indefinite (cf. Lat. *quisquis* 'whoever', Hitt. *kuiš kuiš*), and the use of *quot* with a distributive meaning is restricted to these temporal adverbs.

We find a fairly similar situation in Ancient Greek. Whereas the distributive pronoun is usually ἕκαστος (probably from the adverb ἑκάς 'afar, far off', 'separately'), there is a handful of temporal adverbs built on the quantifier ὅσος 'as much as' (adverbial ὅσον): ὁσημέραι 'daily, day by day' (Thucydides, Platon), ὁσέτη 'every year' (Aristophanes), ὅσοι μῆνες 'every month' (Demosthenes), ὅσαι ὧραι 'every hour' (Themistius). Either these formations combine two independent words (Xenophon: ὅσα ἔτη 'every year') or they merge them into a single form (Aristophanes: ὁσέτη). The formal derivation is exactly the same as in Latvian:

(88) Greek ὁσημέραι 'every day' ← ὅσον 'as much as'
     Latvian *ikdien* 'every day' ← *ik* 'how much, as much as'

A third parallel is even more instructive. In the Celtic languages the distributive pronoun can be traced back to an indefinite adjective *$k^u\bar{a}k^uo$-: Old Irish *cách*, Middle Welsh *pawb*, Middle Cornish *pup, pop, pep*, Middle Breton *pep* 'every, everyone'.[41] In Breton, this distributive pronoun and determiner is regular (e.g. Bret. *pep ti* 'every house', *pep tra* 'everything', *pep unan* 'everyone'), but, in the modern language, it can be replaced by another form *kement* with exactly the same meaning (e.g. *kement ti, kement tra, kement unan*, etc.). An example from the Breton dialect of Plozévet (Finistère) is given in (89):

(89) Breton dialect of Plozévet
     *Anavezoud a   ree   **kement den**   er*
     know.INF   PTC do.PST.3SG **every   man.SG** in = the
     barrez.
     village.SG
     'S/he knew everybody in the village.' = French *Il / elle connaissait tout le monde dans la commune.* (Goyard 2012, 237)

The distributive marker *kement* is identical to the quantitative adverb *kement* 'as much as' (cf. Welsh *cymmaint*), which is a compound formed from the stem *ke-* (< PIE *kom-* 'together with') and the noun *ment* 'dimension, size' (cf. Middle Welsh *maint*, Cornish *myns*, Old Irish *méit*, from

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[41] Matasović (2009, 173–174).

a PIE root *meh₁- 'to measure', Lat. *mētior* 'to measure').[42] In the modern language, *kement* can still be used independently as a demonstrative 'so much, as much' (ex. 90):

(90) Breton dialect of Plozévet

N'euz   *ked* **kemend** *mi*   *abaoe n'euz*
NEG.=be.PRS.3SG NEG **as.many** more since NEG=be.PRS.3SG
ked bagou.
NEG boats.PL
'There are not as many of them any more since there are no boats.' = French *Il n'y en a plus autant depuis qu'il n'y a pas de bateaux.* (Goyard 2012, 361)

It also provides by suppletion the equative form of the adjective *meur* 'big' ('as big as', ex. 91):

(91) Breton

kement *hag an ti*   *mañ*
as.big and the house.SG this
'as big as this house' = French *de la taille de cette maison* (Favereau 1997, 141)

It cannot be used, however, as an interrogative stem ('how much'). In this function, an interrogative adverb *ped* is used, eventually followed by *kement* with initial mutation: *pegement* (e.g. *pegement eo?* 'how much is it?', *pegement a dud ?* 'how many people?').

Taken at face value, there are common features between the Breton and the Latvian expression of distributivity. In both cases, we observe a semantic link between quantification ('as much as') and distributivity ('every'):

(92) Breton *kement den* 'every man'   ←   *kement* 'as much as'
     Latvian *ikdien* 'every day'   ←   *ik* 'how much, as much as'

But there are also differences between the two languages. The strong restriction to temporal reference which originally characterised the distributive marker *ik* in Latvian has no parallel in Breton. The most striking difference, however, is that *kement,* in the history of the Breton language,

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[42] Matasović (2009, 256). In a different way, Henry (1900, 199) derives Bret. *ment* from *mn̥-ti-* (PIE root *men-* 'to be high', cf. Bret. *ménez*, Lat. *mōns* 'mountain').

was subject to an interesting limitation for which there is no equivalent in Latvian: in Middle Breton, *kement* could be used as a distributive marker exclusively when integrated in a relative clause.[43] There was thus a complementary distribution between *pep* 'every', used as a general distributive pronoun, and *kement* 'every + REL', restricted to distributives within relative clauses. This remarkable limitation is abundantly documented in the oldest Breton texts; I have not found in the Old Breton literature any example of *kement* without following relative clause. A few examples from two religious poems of the 16th century, *An Resurrection* and *Tremenuan an Ytron guerchs Maria* (1530, ed. Le Berre 2011) can illustrate the construction of *kement* in Middle Breton (ex. 93–96):

(93) Middle Breton

> ***Quement*** *planet*   *so*   *en aer*
> **as.much** planet.SG be.PRS.3SG in sky.SG
> 'every planet that is in the sky' (*Tremenuan an Ytron guerchs Maria*, 1530, line 5268, ed. Le Berre 2011, 544)

(94) Middle Breton

> ***Quement*** *den*   *so*   *vndro*   *a*   *allo prouf'*.
> **as.much** man.SG be.PRS.3SG one.day PTC can prove
> 'Every man will clearly be able to observe [it].' (*An Resurrection*, 1530, line 3579)

(95) Middle Breton

> *Oar* ***quement*** *vnan*   *so*   *ganet*
> over **as.much** one.SG be.PRS.3SG begotten
> 'over all who are begotten'
> (*Tremenuan an Ytron guerchs Maria*, 1530, line 4880, ed. Le Berre 2011, 510)

(96) Middle Breton

> ***Quement*** *so*   *en fez*   *badezet*
> **as.much** be.PRS.3SG in faith.SG baptised
> 'all who are baptised in the faith' (*Tremenuan an Ytron guerchs Maria*, 1530, line 5494, ed. Le Berre 2011, 564)

These examples exhibit the principal characteristics of the Breton construction:

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[43] More data in Ernault (1888, 362), Hemon (1984, 152–154), Lewis & Piette (1990, 35–36).

1°. As a distributive marker, *kement* can be used with a substantive (*planet* 'planet' in 93, *den* 'man' in 94), with the pronominalising numeral *unan* 'one' (in 95) or even alone (in 96).

2°. Its referent is consistently singular, as expected with a distributive.

3°. In Middle Breton, *kement* is always followed by a finite clause with a conjugated verb, usually *so* 'is' (ex. 93–96).

4°. The meaning is distributive, but includes a connotation of globality ('each one, without exception').

There are two lessons to draw from this parallel. First, the Breton data corroborate the link between quantification ('as much as') and distributivity ('each, every'). From a semantic point of view, distributive-key pronouns do not only describe a plurality of events experienced by a plurality of agents, but, more crucially, they indicate that the calculation of this plurality was carried through to its conclusion unit by unit, separately, without leaving anything out; a quantitative conjunction 'as much as' describes the same type of plural calculation, considering each unit one by one, step by step, up to its end. More than general universal quantifiers ('all'), distributive pronouns ('each') imply that the plural calculation reaches its completion and does not omit any single element. This aspectual property of distributivity is so conspicuous that it hardly needs to be further stressed; it was often pointed out in the recent literature on event plurality.[44] One might add in passing that this is congruent with the shift from distributive ('as much as') to completive calculation ('until').

The second lesson that can be drawn from the Breton parallel is that the functional change of a quantitative conjunction ('as much as') into a distributive marker ('every, each') follows a precise pathway that implies the formation of generalising relative clauses. To make this clear, let us take another Breton example which occurs with some frequency in 16th century literature:

(97) Middle Breton

Quement *den*   *so*   *en bet*
as.many man.SG be.PRS.3SG in world.SG

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[44] See especially Maslov's notion of 'quantitative aspectuality' (Maslov 1985). See also Cusic (1981).

'every man who is in the world' (*A Passion*, 1530, line 138, ed. Le Berre 2011, 74)[45]

The functional change that led to the possibility in Modern Breton of using *kement* as a purely distributive pronoun (*kement den en bet* 'every man in the world') supposes two evolutions:

1°. The quantitative adverb *kement* was reanalysed as a generalising indefinite relative pronoun ('whoever, whichever').
2°. The existential verb was deleted.

This can be schematised as follows:

(a) *kement den so en bet* 'as much man as there is in the world'
(b) *kement den so en bet* 'whichever man is in the world'
(c) *kement den (so) en bet* 'every man in the world'

The evolution from (a) to (b) is an instance of syntactic reanalysis in its classical definition (change of function without change of surface structure), that from (b) to (c) reflects the ellipsis of the existential verb in a way much similar to what we have described above as the conversion of conjunctions to prepositions (cf. Alb. *nga* 'from where X [is]' > 'from X'). Interestingly enough, the initial syntactic pattern with the existential verb has been preserved in Breton up to the present day, but is likely to have undergone a reanalysis of the verb *so, zo* as part of a bipartite distributive morpheme. In a sentence like (98), there is hardly any possibility of ascribing to *kement* its original quantitative meaning and to *zo* its verbal function:

(98) Modern Breton
    e   **kement**   *ti*   *zo*
    in   **every**   house.SG   be.PRS.3SG
    'in every house'

We are rather dealing with a distributive pronoun formed of two elements, *kement...zo*, in a construction in which the noun *ti* is embedded between the two parts. This embedding pattern is not unparalleled in Breton; it is reminiscent of what we find in the demonstrative pronoun

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[45] Cf. also *A Passion* (1530, 1774, ed. Le Berre 2011, 202), *Bubez Mab Den* (1530, 5796, ed. Le Berre 2011, 650).

an ti mañ 'this house', where the noun *ti* 'house' is embedded between the two parts of the demonstrative *an... mañ*.

The evolution of *ik-* in Latvian from a quantitative conjunction ('as much as') to a distributive marker can be understood in the light of these parallels. Let us illustrate this by an example (ex. 99, repeated from 56):

(99) Latvian (folksong)

    Ik   *dʃeefmiɲu*   *iʃdʃeedaju*
    as.many song.GEN.PL sing.PST.1SG
    Satin'   *dʃeefmu*   *kamolâi*
    wind.PST.1SG song.GEN.PL ball.LOC. SG.
    'Whenever I sang songs, I wound them on the ball of songs.' (lit. 'as many songs as I sang...') (K. Baron & H. Wissendorff, *Latwju dainas*, BW, 1894, 47)

This example shares common features with the Breton example given in (98) and can be subjected to the same analysis:

(a) *ik dziesminu izdziedāju, satīnu dziesmu kamuolā* 'as many songs I have sung I have wound them on the ball of songs'

(b) *ik dziesminu izdziedāju, satīnu dziesmu kamuolā* 'whichever songs I have sung I have wound them on the ball of songs' > 'all the songs I have sung I have wound them on the ball of songs'

(c) *ik dziesminu satīnu dziesmu kamuolā* 'I have wound every song on the ball of songs'

The evolution from (a) to (b) illustrates a syntactic reanalysis (quantitative > generalising relative), that from (b) to (c) the ellipsis of the subordinate verb. There are, however, some differences between Breton and Latvian. The first one is the limitation to temporal contexts in Latvian, which supposes an evolution from a purely quantitative ('as much as') to a temporal ('as long as, as often as') meaning. A second difference is the number of the noun introduced by the distributive marker, singular in Breton (*kement den* 'every man' < 'as much man'), eventually plural in Latvian (*ik dziesminu* 'every song' < 'as many songs'). A third difference is that, whereas Breton has preserved a feature of the original construction in the restriction of the distributive *kement* to contexts with a following relative clause, there is no such constraint in Latvian. In spite of these differences, the process is the same, and the Breton data help us to

understand better the stages of development that gave rise to the Latvian distributive marker *ik-*.

Our final task is to account for the rise of the corresponding distributive markers in Lithuanian (*kiek-* in *kiekvíenas*) and Old Prussian (*er-* in *erains*). Our starting point was the assumption that both Lith. *kiek-* and Old Prussian *er-* are secondary in the formation of distributive pronouns and that the oldest structure is that reflected in Latv. *ik-*.[46] This choice is not arbitrary, but is based on the archaism of **ikă* within the correlative system. It can be assumed that the system inherited in Lithuanian was initially fairly similar to the Latvian one and underwent the same syntactic evolution as in Latvian, but later on the old form **ikă* was replaced by its historical substitute in the correlative system **kiekă* and this was also applied to the distributive use of the same morpheme:

$$*ikă \text{ 'as much as'} \quad > \quad *ikă \text{ 'every'}$$
$$\downarrow$$
$$*kiekă \text{ 'as much as'} \quad \rightarrow \quad X (X = *kiekă \text{ 'every'})$$

There is obviously a correlation between the modernisation of **ikă* into **kiekă* in the correlative system and its parallel replacement in the expression of distributivity. To put it otherwise: once **ikă* came out of the correlative system in Lithuanian (that is, once it became a conjunction-preposition 'until') and was replaced by **kiekă*, the same replacement was extended to the distributive marker. This evolution can be illustrated by the following example (ex. 100, repeating 55):

(100) Modern Lithuanian

Kíek   *prãšė,*   **tíek**   *daviaũ.*
how.much ask. PST.3 **so.much** give. PST.1 SG
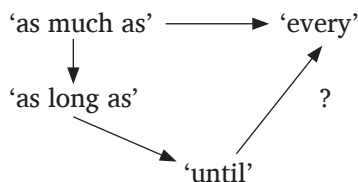'I gave him as much as he asked for.'
(lit. 'As much as he asked for, so much I gave.') (Smoczyński 2007, 675)

The quantitative subordinate clause can be interpreted here in terms of distributivity: 'as much as he asked for' > 'everything he asked for', and we can clearly see the semantic link between the two domains. It can

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[46] The existence of the Baltic loanword **keika* in Finnish (*kaikki* 'all'), Estonian (*kõik* 'all'), Votic (*kõikki* 'all') and Veps (*kaik, kaikuutte* 'every') does not prove the antiquity of **kiekă* as a distributive marker, since we have no evidence as to the date of the borrowing. See Thomsen (1890, 101 = 1931, 173) and Toivonen (1955, 141).

therefore be assumed that Lith. *kiek-* (in *kiekvíenas*) reflects fundamentally the same pattern of evolution as Latv. *ik-* (in *ikviêns*), with a minor formal modernisation. Strikingly enough, Latvian preserved *ik-* even in spite of its formal replacement by *cik* in the correlative system.

The Old Prussian evolution is more surprising. From what has been said above about Latv. *ik* and Lith. *kíek* we can make a plausible case for a development 'as much as' > 'every'. On the other hand, we have tried to explain Lith. *ikì* 'until' as the result of a development 'as much as' > 'as long as' > 'until'. But there is no evidence for a development 'until' > 'every', which is obviously the case in Old Prussian (*er* 'until' > *erains* 'every').

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'as much as' ──────────▶ 'every'
     │                      ▲
     ▼                      │
'as long as'          ?     │
     │                      │
     ▼                      │
      'until'
```

To tackle this problem, attention should be drawn to another Old Prussian form which presents a certain degree of similarity with *er* 'until' and *erains* 'everyone': *ter ains* 'alone'. This form corresponds to German *allein* 'alone, only' in positive (ex. 101) and in negative contexts (ex. 102):

(101) Old Prussian

Adder pirſdau ſteſmu Klauſijwingin turrimai
but   before the.DAT.SG confessor.ACC.SG have.to.PRS.1PL
mes ter ains ſtans grijkans poſinnat
we.NOM.PL **only** the.ACC.PL sin.ACC.PL recognise.INF
'But before the confessor we must only recognise our sins.' =
German: *Aber fůr dem Beichtiger ſollen wir allein die ſůnde bekennen.* (*Enchiridion,* 1561, iii 65$_{21}$)

(102) Old Prussian

Stai Crixtiſnai aſt ni ter ains
the.NOM.SG baptism.NOM.SG be.PRS.3 NEG **only**
ſchklaits vnds.
plain.NOM.SG water.NOM.SG
'Baptism is not only plain water.' = German: *Die Tauffe iſt nicht allein ſchlecht waſſer.* (*Enchiridion,* 1561, iii 59$_7$)

The precise function of *ter ains* is difficult to determine. In both instances it corresponds to an adverb (= German *allein*), but the ending of *ains* seems to be that of the masculine singular numeral 'one', which is possible in (102) in reference to the masculine singular *unds* 'water', but impossible in (101) in reference to the first plural *mes* 'we'.[47] From a semantic point of view, *ter ains* is strongly reminiscent of Lithuanian *tìk* and Latvian *tikai* 'only', and its position in relation to *erains* is exactly parallel to that of Latvian *tikai* in relation to *ikviêns*:
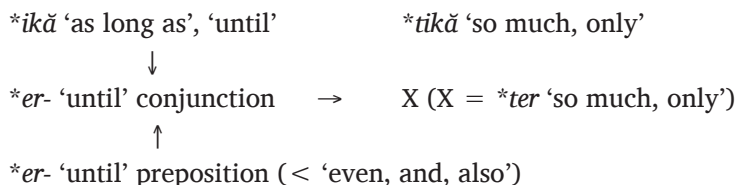
    (103) Old Prussian *erains* 'everyone' ↔ *ter ains* 'only'
             Latvian *ikviêns* 'everyone'   ↔ *tikai* 'only'

On the other hand, in its apparent derivation from the prepositional adverb *er* 'until', Old Prussian *erains* reminds us of the relationship of Lithuanian *ikì* 'until' with the distributive stem **ik-* of Latvian *ikviêns*. The best way to put all the pieces of the puzzle back together is to assume that the morpheme *-er-*, whatever its origin, is a recent replacement of *-ik-* in Old Prussian. This assumption enables us to reconstruct a system parallel to that of Latvian and Lithuanian. More precisely, my claim is that Old Prussian reflects basically the same configuration as Latvian, but with a semantics corresponding more to what we find in Lithuanian. What is inherited is, as in Latvian, the opposition of an old form of correlation with **ik-* as conjunctive ('as much as') and a new form of correlation with **kik-* as conjunctive ('as much as') and **tik-* as demonstrative ('so much'). The first step was the semantic development of a telic meaning, as in Lithuanian ('as much as', 'as long as' > 'until'). At this stage the old forms in **-ik-* were ousted from the correlative system and replaced by new forms with **-er-*. One of the old forms survived in a specialised meaning (OPr. *ikai* 'if'); in its prototypical meaning ('as long as', 'until') it was replaced by *er*.
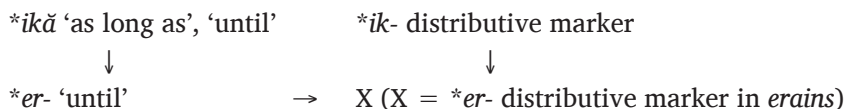
The reason for this replacement might have been the following. There is no certainty whatsoever as to the etymology of *er*, but what seems likely is that it was originally a coordinative particle ('even, and, also') reanalysed as a telic preposition ('until'). On this basis one may assume that, in its immediate prehistory, Old Prussian possessed a system opposing a conjunction **ik-* 'until' (< 'as long as') and a preposition **er-* 'until'

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[47] For the use of the numeral 'one' with a limitative adverb one might mention the parallel of Lithuanian *víen tìk* 'only'.

(< 'even, and, also'). This system, which appeared to be irregular and un-balanced in particular in comparison to the uniform expression in German *bis*, was regularised by the extension of *er- at the expense of *ik-: *er- 'un-til' came to be used both as a preposition and as a conjunction. The Old Prussian corpus does not allow us to verify the validity of this hypothesis: by accident we only have evidence for the preposition *er* and no context corresponding to German *bis* used as a conjunction. Given this historical substitution, one can understand that *-er- was generalised not only in the conjunctive stem of the ancient correlative system (*ik- replaced by *er-), but also by analogy in all the forms that belonged to the correlative system regardless of their antiquity (*tik- also replaced by *ter-):

$$*ik\breve{a} \text{ 'as long as', 'until'} \qquad *tik\breve{a} \text{ 'so much, only'}$$
$$\downarrow$$
$$*er\text{- 'until' conjunction} \quad \rightarrow \quad X \ (X = *ter \text{ 'so much, only'})$$
$$\uparrow$$
$$*er\text{- 'until' preposition} \ (< \text{ 'even, and, also'})$$

This scenario can also explain the extension of *er-* from the conjunc-tion to the distributive marker. Once *ik- was replaced by *er- in one of its meanings (the conjunction 'until'), it underwent the same replacement *in all its functions*, even as a distributive marker:

$$*ik\breve{a} \text{ 'as long as', 'until'} \qquad *ik\text{- distributive marker}$$
$$\downarrow \qquad\qquad\qquad\qquad \downarrow$$
$$*er\text{- 'until'} \qquad\qquad \rightarrow \quad X \ (X = *er\text{- distributive marker in } \textit{erains})$$

The fact that *ikai* 'if' was not replaced by a form in *er- is obviously due to its semantic remoteness, which separated it from the rest of the correlative system. To a certain extent it illustrates one of Kuryłowicz's famous laws of analogy: *ikai* 'if' is an old form used in a new function, whereas *er* 'until' is a new form used in the old function. Even deformed by this secondary clothing, the Old Prussian data have the same source and illustrate the same historical pathway as the Lithuanian and Latvian ones.

8. Conclusion

According to Gil (1995, 321), distributive quantifiers such as Engl. *each*

and *every* are 'among the most exceptional of quantifiers in their syntactic and semantic behaviour': unlike global quantifiers such as Engl. *all*, they express 'a marked semantic relation' and occur in a 'restrictive set of environments' (1995, 326). This descriptive complexity is also echoed in the diversity of their diachronic sources. Typologically, Haspelmath (1995) identified three possible origins of distributive markers:

(1°) free-choice determiners like 'any', often derived from the *wh*-determiner 'which' with a special particle ('also', 'even', 'or', 'it may be'). Example: Latin *quisque* 'every' from *quis* 'who, which' and *-que* 'and, also'.

(2°) distributive prepositions. Example: Hindi *prati* 'every' from Old Indic *prati* 'near, against, upon';

(3°) global quantifiers. Example: Spanish *toda casa* 'every house' compared with *todas las casas* 'all the houses'.

Haspelmath (1995, 380) recognises himself that 'this is an impressionistic statement based to a large extent on Indo-European' and that 'other language families and types may take their universal quantifiers from completely different sources'. As a matter of fact, even in the Indo-European languages, the range of possibilities can really be impressive. The aim of this paper was to shed light of the origin of the distributive markers in the three Baltic languages (Old Prussian *erains*, Lithuanian *kiekvíenas*, Latvian *ikviêns*). What I tried to show is that, in spite of their outward dissimilarity, the three distributive markers reflect the same historical pattern, deriving from a quantifying conjunction ('as much as') specialised in elliptical contexts as a distributive marker ('every'). The divergences between the three Baltic languages are due to various recompositions of the underlying correlative system and add little to our understanding of distributivity.

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ABBREVIATIONS

ACC — accusative, ADV — adverb, AOR — aorist, ART — article, COND — conditional, DAT — dative, DEF — definite, DISTR — distributive, F — feminine, FUT — future, GEN — genitive, GER — gerund, IMP — imperative, IMPF — imperfect, INF — infinitive, INS — instrumental, IPFV — imperfective, LOC — locative, N — neuter, NEG — negative, NOM — nominative, OPT — optative, PFV — perfective, PL — plural, PLUPF — pluperfect, PREP — preposition, PRS — present, PST — past, PTC — particle, PTCP — participle, REFL — reflexive, REL — relative, SG — singular, SBJ — subject, SBJV — subjunctive, VOC — vocative

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