

We need world-wide corpus-based typology: A parallel corpus study of restrictives ('only')

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Language is a tool for communication in concrete use and there are several thousand languages; hence, approaches that are both corpus-linguistically *and* typologically informed must play an important role in linguistics. This is demonstrated in an investigation of the generally expressed meaning (GEM) 'only', considered here in translations of the New Testament. It is shown that restrictives are universal (are attested in all 121 languages of a stratified sample from 121 language families and isolates), that the generally expressed meaning (GEM) 'only' differs considerably from the parochially expressed meaning (PEM) of English *only*, that restriction plays an important role in discourse and that the use of restrictives exhibits hemispheric differences with the Pacific and the Afro-Eurasian linguistic hemispheres reflecting partly different usage patterns. It is argued that these differences are deeply rooted in discourse (*parole*) rather than grammar and lexicon (*langue*) and are so common in discourse that they percolate to written Bible translations.

1. Introduction

In a recent article, Levshina (2022) advocates *corpus-based typology* (using corpora for cross-linguistic comparison), especially spotlighting case studies with samples of European, Eurasian and LOL-languages (Literate, Official, and with Lots of users; Dahl 2015). In this paper, I will argue that, within corpus-based typology, approaches with world-wide language samples can deal with a range of questions that are difficult to approach otherwise. The exemplification consists of case studies about the expression of 'only' in the languages of the world. With the exception of König (1991), there is very little previous comparative work on 'only'. Here it will be explored

- a. whether 'only' can be considered to be universal (§2),
- b. how the *generally expressed meaning (GEM)* 'only' (world-average) differs from the *parochially expressed meaning (PEM)* of English *only* (§3),
- c. to what extent 'only' can be considered a discourse notion (§4) and
- d. whether 'only' expressions exhibit macro-areal differences in use between *Pacific languages* (indigenous languages of the Americas, New Guinea and Australia, not including a single typical LOL-language) and *Afro-Eurasian languages* (Africa and Western and Central Eurasia) (§5).

'Only' is a favorable domain for automatic quantitative analysis in the world-wide parallel corpus used here, translations of the New Testament [NT] (Mayer & Cysouw 2014; Wälchli 2023), since 'only' expressions happen to be fairly *transparent* (one-to-one correspondence between morpheme and meaning), which facilitates their automatic extraction. They are not always words, though.

König (1991: 21) notes that Tarma Quechua, Purepecha, Mokilese and Manam have suffixes (note that these are all Pacific languages). When 'only' is an affix, markers are often termed "restrictive" or "limitative" in grammars, but I will use 'only' marker and "restrictive" as synonyms here. Restrictives are underresearched in typology, which entails that they are often rather poorly treated in reference grammars – the traditional sources of material in typological studies – so that alternative data sources are needed, one of several arguments for using corpus material.

It is not obvious whether restrictives are grammatical markers at least according to Croft's (2003: 224) criteria. According to Croft (2003: 224), members of grammatical categories are prototypically (i) bound, (ii) closed class items and (iii) obligatory. 'Only' markers can be affixes (bound) or full words (free), are quite independent of the major word classes nouns and verbs, but often not easily attributable to closed sets, and can be extremely frequent in use without necessarily becoming grammatically obligatory under specific morphosyntactic conditions. However, restrictives require a morphosyntactic environment. Restrictives apply to a constituent (the semantic literature calls this "focus") within the context of a predication (the semantic literature calls this "scope"; see, e.g., König 1991, ch. 3).¹ The functional domain of restrictives is *absence of alternatives*.² Absence of alternatives can be handled in discourse largely in three different ways: by a *restrictive marker* such as *only* (1a), by exhaustive listing inferred from the context (without marker), called here "bare-affirmative" (1b), and by *exception to an empty set* (1c).

- (1) (a) A bad tree produces **only** bad fruit. (restrictive strategy)
 (b) A bad tree produces bad fruit. (bare-affirmative strategy)
 (c) A bad tree **does not** produce **anything except/but** bad fruit.
 (exception strategy)

Restriction and exhaustive listing are two sides of the same coin – absence of alternatives, but differ in marking (overt vs. covert). Absence of alternatives can be scalar (all absent alternatives worth considering are on the other side of a scale) and non-scalar. What renders (1) scalar is the quality modifier 'bad'. However, the most typical scalar examples have modifiers expressing minimal

¹ This is not very different from secondary predication (Himmelmann & Schultze-Berndt 2005). Actually, 'alone'-expressions, which are sometimes difficult to strictly separate from restrictives, are often quite typical cases of secondary predicates.

König (1991: 32) points out that there are many different types of focus, and according to Matic & Wedgwood (2013), focus cannot be considered an established cross-linguistic category type. Also note that information question words, which are usually considered to be focal, and restrictives can be in different constituents in the same clause in such examples as *Who ate only rice?* (see, for instance, Tellings 2014: 530 for Imbabura Quechua).

² According to König (1991: 32), a focus particle "relates the value of the focused expression to a set of alternatives".

quantities (the most typical one being 'one'). Whether scalar or not, absence of alternatives is always in some sense hierarchical. The restricted/exhaustively-listed/exceptional set is not on the same level as the absent set of alternatives, it is "higher" or "lower"; there is always some sort of inequality between the two. Not incidentally, comparison of inequality plus negation is a *natural paraphrase* of 'only', as illustrated in (2) from Tabasaran, where 'only' is expressed by the Tabasaran comparison of inequality construction, literally "don't serve anyone (other) than him" with 'other' being implicit. A natural paraphrase is a paraphrase actually attested in some other natural languages as a translation equivalent (Wälchli 2022: 1552).

(2) Tabasaran (tab, Nakh-Daghestanian, NT40004010³)

va sa-r duʒa-z-t'an ʒulluʒ ma-p'-an!"
and one-HUM 3SG-DAT-COMP work/service PROH.2SG-do-CIRC

'[Then Jesus said to him, "Go away, Satan, for it is written, 'You shall worship the Lord your God] and serve **only** him.", literally "...and don't serve anyone **than** him" (like French *ne...que* 'only' < Latin *non...quam*).

Example (2) emphasizes exclusivity. I understand "exclusivity" here as not easily being amenable to the bare-affirmative strategy. In (2), the effect is due to the context; 'and serve him!' would be rather redundant after 'worship God!', the second conjunct primarily contributes an emphasis on absence of alternatives and hence can be expected to be marked explicitly. In the semantic literature, the terms "restrictive" and "exclusive" are often used in similar ways. Here, I will use "exclusive" as a narrower term. Exclusion is emphatic restriction to an exclusive subset.⁴

In the semantic literature, *only* is usually discussed in isolated and constructed examples such as (3a), and is often decomposed into a combination of a bare-affirmative (3b) and a negative-with-exception (3c) component (see, for instance, König 1991: 98 for the details glossed over here).

- | | | | |
|-----|-----|---------------------------------------|-------------------------|
| (3) | (a) | <i>Only Jane smokes.</i> | Restrictive |
| | (b) | <i>Jane smokes.</i> | Bare-affirmative |
| | (c) | <i>Nobody but/except Jane smokes.</i> | Negative-with-exception |

However, as we have seen above, (3b) and (3c) are nothing else but possible alternative strategies to express absence of alternatives. However, the restrictive (1a), the bare-affirmative (1b) and the exception (1c) strategies are not completely synonymous. It will turn out as an empirical result of a cross-

³ 40 stands for Matthew, the 40th book of the Bible, and 004010 for chapter 4 verse 10.

⁴ It has also been argued that exclusion is non-scalar.

linguistic study in §3, that they form a continuous domain, as illustrated in Figure 1 with three languages in a simplified manner.⁵

	Bare-affirmative "light <i>only</i> " contexts	Restrictive <----- "heavy <i>only</i> " contexts----->	Exception
English	[NO MARKER]	<i>only</i>	NEG + <i>except/but</i>
Tabasaran	[NO MARKER]	NEG + - <i>t'an</i> 'than'	NEG + <i>ʕajri</i> 'except'
Miskito	<i>baman</i> 'only'	----- <i>baman</i> 'only' -----	<i>baman</i> 'only'

Figure 1: Absence of alternatives as a continuum

In the parallel corpus, there are many examples where bare-affirmative and restrictive statements are each other's natural paraphrases, as in (4):

(4) Miskito (miq, Misumalpan, NT40007017): "light *only*" context

Baku bamna, dus yamni bani mâ yamni sak-i-sa,
 like that's.why tree good every fruit good find/choose-IND-3SG
*bara dus saura bani mâ saura **baman** sak-i-sa.*
 then/whereas tree bad every fruit bad **only** find/choose-IND-3SG
 'In the same way, every good tree produces good fruit, but a bad tree produces bad fruit.' Literally: "...bad fruit only".

Exhaustive-listing readings often apply to constituents without any overt marker as, for instance, pointed out by Van Rooij (2002), who discusses *only* in terms of relevance. Natural language discourse is not fully explicit; less important circumstances are usually not reported, which is why uncertainties about readings with or without exhaustive listing may emerge that may be explicitly resolved by restrictives. The emergence of restrictive markers in the languages of the world follows from the fact that contexts with absence of alternatives are frequent in discourse, at least some of which must be overtly marked. In most saliently restrictive contexts such as (2) – we may call this "*heavy only*" contexts – overt marking of absence of alternatives is almost mandatory; in contexts such as (4) – we may call these "*light only*" contexts – the job is done very well also by the bare-affirmative strategy.⁶ However, as we will see, the languages of the world greatly differ as to the extent to which they prefer overt or covert strategies for absence of alternatives.

There is also a set of examples where the restrictive and the negative-with-exception strategy are each other's natural paraphrases. Here, English and other European languages often use the negative-with-exception strategy

⁵ For a similar case where semantic-pragmatic paraphrases correspond to constructions also attested across languages, see de Swart et al. (2022).

⁶ For "heavy" vs. "light" forms, see Kemmer (1993: 25) and Wälchli (2006).

where many non-European languages tend to prefer 'only' expressions, as in (5).

(5) Miskito (miq, Misumalpan, NT41005037)

Bara upla wala lika kau ya-n ai yula kahb-ras,
 then person other like still give/make-PST.3 OBJ.3 ? put-NEG
Pita, Jems bara muihnika Jan ba baman.
 Peter James then brother John DEM **only**

'And he did **not** allow anyone to follow along with him **except** Peter and James and John, the brother of James.'

Examples such as (4) and (5) suggest that not all 'only'-marked examples contain affirmative and negative semantic components, but that the absence-of-alternatives-domain rather is a continuum. To detect these and other phenomena, it is necessary to pursue an approach that is massively cross-linguistic and usage-oriented at the same time and it is the purpose of this paper to argue, by considering restrictives, that linguistic approaches that are both cross-linguistically and corpus-linguistically informed have many advantages.

2. Universal, but not universal in all usage types

In this section, I will show that languages tend to have at least one segmental restrictive marker (can be a word-form, clitic or affix) which is (i) moderately or highly frequent, (ii) typically expresses exclusion and (iii) tends to be a one-word rather than a two-word expression (can consist of several morphemes, though, such as (European) Spanish *sola-mente* and English *on-ly* with an adverb suffix).

A meaning encoded by a certain marker in a certain language is an *expressed meaning*. This paper distinguishes between *parochially expressed meanings* (PEM, a meaning corresponding to a marker in one language, here notably the English PEM *only*) and *generally expressed meanings* (GEM, a meaning expressed in similar ways by markers in many different languages from different language families and linguistic areas, here notably the GEM 'only' expressed across a stratified sample of 121 languages). Note that a generally expressed meaning is a meaning-form pair, a meaning that is expressed, at least in many languages. For grammatical categories, GEMs have been called gram types (Bybee & Dahl 1989; Wälchli & Dahl 2016), but we need a more general term, since grammatical category types are only a special case of a more general phenomenon. 'Only' markers are usually neither most typically grammatical nor most typically lexical items, but – like lexical and grammatical category types – they constitute a generally expressed meaning, whose language-specific markers are similar, but not identical, in use. Both PEMs and GEMs are modelled as extensional sets in a parallel text corpus (sets of verses in the NT) both as fuzzy and as strictly delimited extensions. Fuzzy sets can be obtained by counting the number of translations where a set of marker is attested. For the

English PEM *only* this means the number of different translations per verse where *only* is attested. For the GEM 'only' this means the number of verses where markers in 121 languages are attested that have been identified to mean 'only'. The set of contexts with the highest number of translations with an attested marker is sometimes sloppily called "prototype" (which disregards that prototype is originally a psychological notion and sets obtained by cross-linguistic comparison are unlikely to have psychological reality), so it is better to call them cross-linguistically most salient contexts or attractor contexts. Salient or attractor contexts may be defined as contexts (verses in the NT) in which a large number of languages make use of their most characteristic marker for a meaning, here 'only'. For automatic searches, strict sets of verses can be obtained from fuzzy sets by cutting below a certain number of translations with attested markers both for the PEM *only* in English and for the GEM 'only' in the stratified sample.

According to König (1991: 98) it is "a fair guess that [all languages] will have at least one 'exclusive' {=restrictive, BW} particle like E. *only*...". We cannot survey all languages here, but the parallel corpus considered here contains languages from as many as 121 different genealogical affiliations (families or isolates) according to Hammarström et al.'s (2022) classification (no sign languages though). For the manual inspection, I have selected a stratified sample of 121 languages with one language per family or isolate (see Appendix A). Since genealogical diversity is higher in the Pacific hemisphere, it contains as many as 91 languages from the Americas, New Guinea and Australia.

Table 1 displays a selection of results from the stratified sample (for the full list, see Appendix A). A manual qualitative analysis of the texts with the help of reference grammars and dictionaries reveals that all languages in the sample have at least one restrictive (many languages actually have more than one). On the basis of the manual analysis, optimal linear search strings were determined for all languages (if there are several markers, one has been chosen, but that single marker can have allomorphs or be inflected). The frequency column "f verses" (frequency counted by number of verses where the string is attested) shows that the rough automatic count of markers displays considerable differences in frequency.

Trans- lation	Language	Family	Manually determined search strings	f verses	WW seeds Max 35 / 501 verses	Eng seeds Max 2 / 508 verses
dts	Toro So Dogon	Dogon	sai	267	[sai]1	[sai]1
ian	latmul	Ndu	mina	826	[mina]1	[mina]1
cap- 2004	Chipaya	Uru-Chipaya	>qaś<	1420	[>qaś<]1	[>qaś<]1
kat- revised	Georgian	Kartvelian	მარტო	56	[მარტო მხოლოდ გარდა]1	[მხოლოდ მარტო გარდა]1
mww	Hmong Daw	Hmong-Mien	xwb	651	{[xwb]1 [tsuas]2 [tib]3 }	{[xwb]1 [tsuas]2 [tib]3 }
shp	Shipibo- Conibo	Pano-Tacanan	>bicho<	330	[>bicho<]1 [>res<]2	[>res<]1 [>bicho<]2
nuy	Wubuy	Gunwinyguan	>-bugij< >-wugij<	1165	[>ugij<]1	[>-bugij<]1
ayr-2011	Central Aymara	Aymaran	>ki<	5051	[>kiw<]1 [>#sapa<]2	[>kiw<]1
cbu	Candoshi- Shapra	(Isolate)	>mari<	3714	[>mari<]1	---NONE---
kwi	Awa- Cuaiquer	Barbacoan	>ain#< >min#<	3795	---NONE---	---NONE---
naq	Nama (Namibia)	Khoe-Kwadi	lguisa lguiba lguina	139	[>#lgui<]1	[>#lgui<]1
yle	Yele	(Isolate)	mo	244	[ngmidi]1 [mo nuw:o]2	[mo]1

Table 1: Selected languages from the stratified 121-language sample

The rightmost two columns report the result of an automatic extraction of markers with a collocation measure (see Appendix B). A comparison of the two rightmost columns in Table 1 unveils that the outcome is largely the same even though the result is slightly better with world-wide than with just English trigger forms or "seeds" (but actually not better for all languages). We can conclude that despite considerable differences between the PEM English *only* and world-wide GEM 'only' (see §3), restrictives in the languages of the world are indeed 'only' markers in the sense that they are quite similar to English *only* in use, provided that – and this is an important condition – even less salient English 'only' contexts are included. English *only* occurs in between 65 to 340 verses of the NT depending on the translation, but the results in Table 1 are obtained by choosing a strict set of as many as 508 verses (all verses where *only* occurs in more than one of 32 English translations) as search domain. This accounts for the fact that many languages of the world use their 'only' expressions considerably more frequently than English. However, this is a difference in use and not a language system property in the grammar or lexicon. In order to determine the world-wide (WW) search domain, a strict set of 501 verses where one of the manually determined search strings occurred in at least 35 languages

was selected. Note that this results in the two search domains having about the same size in number of verses. However, the intersection of the two sets is only 284 verses.

Let us look at the markers in Table 1. In the easiest case, the marker is one word-form, as in Dogon *sai*. What the table does not show is that some markers, such as latmul *mina*, are actually homonymous with another meaning: *mina* is both 'only' and *min-a* [2SG.M-GEN] 'your' (as a consequence of which, the frequency value 826 for 'only' in Table 1 is too high, the correct value is in the range of 500-600). Since such homonymies are not recurrent, not removing them does not do much harm for determining cross-linguistic frequencies of 'only' markers per verse. In many languages, the markers are affixes, such as the Chipaya suffix *-qaś*. If there are several markers that are mutually exclusive in use, such as Georgian *marto* 'alone, only', *mxolod* 'only' and *garda* 'except', the extraction algorithm arranges them paradigmatically in one slot because their occurrence is mutually exclusive: [მარტო|მხოლოდ|გარდა]. However, many languages have constructions with more than one marker. Hmong-Daw is a case of multiple slots, there are such examples as ***tsuas yog Vaj-tswv tib leeg xwb*** [**only**₂ one king-master **single** person **only**₁] 'except God alone' (note that in English even *except* and *alone* are two markers). Note that the order of extraction [xwb]₁ [tsuas]₂ [tib]₃ is not the same as word order, but follows strength of collocation in descending order. Just as there can be two words in a sequence, there can be two affixes in a row as in Shipibo-Konibo *Diosbichores* (=Dios-bicho-res [God-only-just] 'only God'). The algorithm identifies the two morphemes without difficulty even though they are not separated in writing because they do not always occur together, sometimes it is just *-bicho*, sometimes it is just *-res*. However, sometimes morpheme boundaries are not transparent. In Wubuy there are the two allomorphs *-bugij* and *-wugij* 'only', making >ugij< a good compromise. Aymaran *-ki*, Candoshi-Shapra *-mari* and Awa-Cuaiquer *-/yŋ/* <-in> have very high text frequency which renders them less transparent. The Awa-Cuaiquer marker is never extracted automatically and the Aymaran marker *-ki* makes it only in an actually bimorphemic sequence *-ki-w* 'only' plus affirmative or personal evidence sentence marker *-w(a)*. A considerable number of languages make little or no distinction between 'only' and 'one'. In Nama, both 'one' and 'only' have the stem *lgui(-)*, and are only syntagmatically distinguishable, as in *lgui iri lguiba* 'only one hour', *lgui* 'one' precedes the noun whereas *lgui-* 'only, alone' follows the noun and is inflected for gender and number with a suffix. Rarely, a frequent word for 'one' is wrongly extracted in the first slot. Yele *ngmidi* is 'one', *mo* is 'only' and *mu* (not extracted) is 'only' in *mu ngmidi* 'only one'.

The manually determined search strings can now be used for detecting which are the most characteristic contexts of use for 'only' markers world-wide. Table 2 lists some more or less characteristic contexts (as far as represented in the parallel text corpus).

Top ranks are exclusive [Excl] rather than minimal amount or smaller amount than expected (such as 'only one' or 'only' with other numerals [Min]). Negative-with-exception contexts [Except] (here counted with number of *except* in English translations) rank highly in the stratified sample. Typical 'alone'-contexts are difficult to separate from 'only', since many 'only' markers also mean 'alone'. Uniqueness modification [Uniq] (English, *the only N the one and only N*) figures prominently among the top ranking examples in English, but not in the stratified sample. "Light" uses (where at least formal English style usually lacks any overt marker and uses the bare-affirmative strategy) are rather heterogeneous in the stratified sample; some rank very highly, some have overt 'only' just in very few translations of the stratified sample.

Koine Greek (grc) *mon-* 'only' happens to use 'only' very restrictively and it is probably of some importance where there was an overt marker in the original Greek text. Most translations to European languages follow the Greek original very closely. However, the results in the world-wide sample do not simply follow the original Greek text.

Verse	Text	Rank of 7933	f WW of 121	Type	f <i>only</i> of 32	grc <i>mon-</i>	f <i>except</i> of 32	f <i>alone</i> of 32
58009007	but only the high priest enters into the second tent [ONLY] once a year [...]	1	109	Excl	20	x		13
40005047	And if you greet only your brothers, what are you doing that is remarkable? [...]	2	108	Excl	31	x		
40004010	[...] for it is written, 'You shall worship the Lord your God [ONLY] and serve only him.'	3	106	Excl	24	x		8
40019017	[...] There is [ONLY] one who is good [...]	29.5	88	Min	17		3	
42006032	"And if you love [ONLY] those who love you, what kind of credit is that to you? [...]"	42	84	Light	4			
46001014	I give thanks to God that I baptized none of you except Crispus and Gaius,	83	73	Except	1		25	
41009037	[...] whoever welcomes me does not welcome [ONLY] me, but the one who sent me."	192	57	Light	6			
40014023	[...] So when evening came, he was there alone .	289	47	Alone		x		31
42007012	[...] his mother's only son, [...]	303	46	Unique	30	x		
41002017	[...] "Those who are healthy do not have need of a physician, but [ONLY] those who are sick. [...]"	316.5	45	Light	1			
42016007	Then he said to another, 'And how much do you owe?' And he said, 'A hundred measures of wheat.' He said to him, 'Take your promissory note and write [ONLY] eighty.'	437	38	Min				
41003034	"Behold, [ONLY these are] my mother and my brothers! (see example (6))	4219.5	12	Light				
41006024	"The head of John the baptizer [ONLY] ." (see example (7))	6568	7	Light				

Table 2: More and less salient examples

In "light" contexts, restrictive marking competes with the bare-affirmative strategy and this is possible because in all these examples the bare-affirmative is sufficiently informative in discourse. Consider (6) and (7) from Sougb, reflecting contexts where restrictives are very rare cross-linguistically. What distinguishes (6) is that the most expected referents are excluded (biological mother and brothers are excluded from the predication be mother and brothers).

In both (6) and (7) the referent of the restriction is per se a surprise, it is not primarily the restriction that is the surprise. One might argue that there is a semantic shift from restriction to counterexpectative referent.

(6) Sougb (mnx, East Bird's Head, NT41003034)

...Len gin dous eng dan ind-im dara
 3PL DEM/TOP only REL 1SG POSS.1SG-mother with
 ind-agto-r misen.
 POSS.1SG-yo.brother-PL true/really

Literally: "**Only** they are my mother and my true brothers."

"[...they told him, "Behold, your mother and your brothers and your sisters are outside looking for you. And he answered them and said, "Who are my mother and my brothers?" And looking around at those who were sitting around him in a circle, he said, "Behold,] my mother and my brothers!"

(7) Sougb (mnx, East Bird's Head, NT41006024)

...Ban b-acgeij naugb en eic Yohanes Gogun Lusud Se
 2SG 2SG-request for 3SG take John ? people at
Duhu en mougt dou ban dous.
water 3SG head to 2SG only

Literally: "Ask that he takes the head of John the baptizer only."

"[And she went out and said to her mother, "What should I ask for?" And she said,] The head of John the baptizer."

In the semantic literature it is often assumed that the bare-affirmative component (termed "prejacent" in the semantic literature) is a presupposition or is "hearer-old" (Beaver & Clark 2008: 250, note 2). Obviously, this does not hold in (6) and (7), where the statement without restriction is new and surprising information.

Restrictives are not particularly stable diachronically. If lost, as may occur in creole genesis, they can be supplied by condensed afterthought-sentences, such as Tok Pisin *tasol* (<*that's all*) or Bislama *nomo* (<*no[t] more*). Restrictives are universal, because there are sufficiently many salient contexts of use where restriction must be made explicit to be understood (such as those top-ranked in Table 2). Restrictives have neither obviously referentially motivated nor obviously logically motivated meanings.⁷ Together with the fact that restrictive constructions have at least two types of frequent natural paraphrases – bare-affirmative and negative-with-exception – in many, but far from all, of their uses, semanticists adhering to very different theoretical traditions (e.g. Wierzbicka 1986 and Beaver & Clark 2008) have been enticed to believe that the meaning of 'only' is semantically decompositional (actually – what perhaps holds for all

⁷ IFF (if and only if) is a logical operator, of course, but "only" in it is just a way to paraphrase it in a natural language, it is not a logical component of IFF.

meanings – its meaning is a cluster of closely related meanings with Wittgensteinian family resemblance).

We may conclude that 'only' markers lend themselves very well to both quantitative and qualitative analysis in massively parallel texts. In almost all languages, at least some 'only' markers can be easily extracted in parallel texts by means of a collocation measure, because almost all languages have at least a highly or a moderately transparent sequential marker with sufficiently high text frequency. Markers in one or in a few languages may serve as "seeds" for harvesting markers in all other languages of the parallel text corpus. Automatic extraction can be started as soon as the distribution of one moderately salient member of the GEM 'only' is known (such as English *only*), but works even better with a diverse set of seeds (e.g., from a stratified sample). A fair guess is that the exceptionally high transparency of the GEM 'only' can be explained by a combination of three circumstances: (i) isolation from both verbal and nominal paradigms, which is why there is no strong cumulation with typical verbal grammatical categories (e.g., tense and aspect, person and number) or nominal grammatical categories (case, definiteness, number, possession), (ii) a sufficiently large number of occurrences so that one-word expressions or segmental affixes are likely to emerge, (iii) sufficiently low number of occurrences so that the expression does not easily become entirely non-segmental. However, the GEM 'only' recurrently intersects with other GEMs, notably with 'one', with negation and with contrast ('but'), and this in different and in complex ways. For instance, some languages have different markers for 'only' in "only one" (and this set of languages is not the same as the one where 'only' and 'one' are expressed by the same or related markers).

There is a very large number of heterogeneous "light" contexts where 'only' markers can, but need not, occur; that is, contexts where 'only' markers compete with the bare-affirmative strategy. Even though 'only' markers may develop specific grammatical functions in particular languages (such as habitual or intensive), it is the large and highly heterogeneous set of "light" contexts that is the main reason why languages (but also styles within a language) differ very much in their frequency of 'only' markers. The fact that restrictives are universal on the level of language does not entail that there is a single context where the use of an 'only' marker is obligatory in all languages. The negative-with-exception and the bare-affirmative strategies can never entirely be ruled out. In exclusion contexts, however, where the bare-affirmative strategy is odd, 'only' markers are most likely to win the competition in language production. Put differently, exclusion (rather than minimal quantity or attitude) is the most characteristic kind of context for 'only' markers cross-linguistically.

3. English PEM *only* vs. world-wide GEM 'only'

In Section 2, we have seen that starting with English *only* for the extraction of restrictives in other languages yields nearly as good results as using seeds from a world-wide stratified sample. However, this does not imply that English *only* is used in the same way as restrictives in all other languages.

In Figure 2 every dot is a NT verse with its position on the x-axis showing the frequency of English *only* across 32 translations of the NT and its position on the y-axis showing the frequency of manually selected 'only' search strings in the world-wide stratified sample of 121. Hence, uses above the diagonal have more commonly a marker for 'only' in the world-wide sample – among other things contexts with English *except* (negation-with-exception contexts) indicated with blue symbols – and uses below the diagonal have more commonly *only* in English – among other things contexts with negated restriction 'not only' indicated with red snowflake symbols. Most verses are in the left bottom corner (have never *only* in English and very rarely a restrictive in the stratified sample). The figure shows that English *only* tends to have lower frequency than world-wide GEM 'only' on average (most verses are in the upper-left half of the diagram). English, and other European languages, including Koine Greek *mon-*'only', tend to have low occurrences of 'only'.

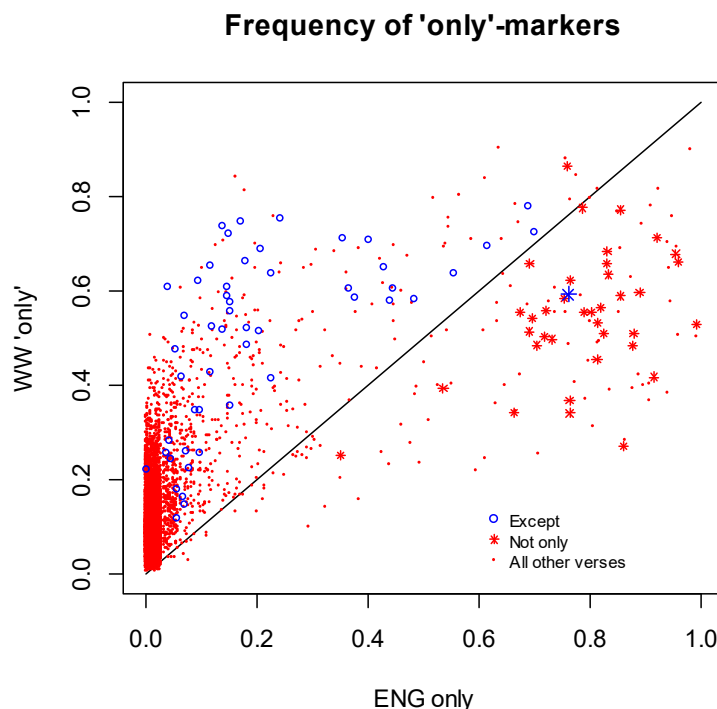


Figure 2: Only in English and in the world-wide stratified sample

Each dot is a verse and the value stands for the ratio of translations with restrictives in the two samples.

Many languages often lack 'only' where English has *not only* as illustrated in (8) from Nalca.

- (8) Nalca (nlc, Nuclear Trans-New Guinean, NT59001022): negated restriction context

...yuba kele-munu-kanya ono' unu-lu-lulum.
word hear-MED.2SG-after then do-IPFV-HORT.2PL

'...be doers of the message and **not only** hearers...', literally "having heard the message, then do it"

Table 3 summarizes a number of uses where world-wide GEM 'only' and parochial English *only* markedly differ in use, each illustrated with one characteristic example; for more examples, see Appendix C.

Type	Verse	Text (English Lexham translation)	WW %	ENG %
Adj <i>only</i>	42007012	...his mother's only son...	38.0	93.8
<i>not only</i>	49001021	... not only in this age but also in the coming one,	26.4	84.4
<i>if only</i>	40009021	..." If only I touch his cloak I will be healed."	33.9	65.6
Applies to predicate	42008050	..."Do not be afraid! Only believe..."	35.5	62.5
<i>except</i>	40011027	...no one knows the Son except the Father, and no one knows the Father except the Son...	71.9	12.5
<i>alone</i>	42009036	And after the voice had occurred, Jesus was found alone ...	57.9	9.4
Numeral	59002019	You believe that God is [ONLY] one; ...	52.9	6.3
"Light"	42006032	"And if you [ONLY] love those who love you..."	69.4	12.5

Table 3: Differences in use between English PEM *only* and world-wide GEM 'only'

Much of the semantic literature on restrictives only considers English *only* (or other European languages). The question thus arises as to whether uses with the overrepresented PEM *only* have been attributed undue priority. Interestingly, this is actually not the case. Things are more complex. Average semanticists treating *only* do not just have English *only* in mind, they also suffer from the obsession that *only* is first of all a focus particle, as a consequence of which adjectival and clausal uses tend to be disregarded or at least neglected. Rather, Table 3 suggests that these uses – even though rather peripheral in a global context – should not be disregarded. They play a role for restrictives in a minority of the world's languages, but are still cross-linguistically highly recurrent uses, put differently, they are all members of the 'only' family of meanings.

Interestingly, the numeral use (*only one*), and with it other scalar uses where *only* is associated with a minimal quantity, is treated extensively in the semantic literature. Our results suggest that this is a rather peripheral use of English *only*, since English and other European languages often use the bare-affirmative

strategy here. English *only* with small quantities seems to be salient to semanticists, whereas they tend to fail to be attentive to similar English uses where *only* is lacking. Here we meet with a very important advantage of the massively parallel corpus-linguistic approach: attentiveness to the covert part of the relevant domain (because overt in some other languages). English and Standard Average European in general – at least formal written styles and registers – have a very low incidence of restrictives in a global perspective.⁸ Hence, looking at restrictives in English is a bit like studying grammatical gender in Finnish. Picking instead a random Pacific language might be a more favorable choice.

If we now come to the two most negative consequences of an exclusively Anglocentric perspective, these are the two following, formulated here in the form of postulates: (i) restrictives should be considered together with 'alone', which entails the consideration of secondary predication (here, this paper is limited, the interplay of 'alone' and restrictives must be reserved to a further study), (ii) more attention must be paid to the bare-affirmative and the negative-with-exception strategies; put differently, the domain is much broader than uses where English *only* and equivalents in European languages typically occur.

Point (ii) is illustrated here by contrasting two probabilistic semantic maps, both based on data from 28 European languages (and hence both Eurocentric). In the first one ("ENG"), 101 NT-contexts with a high frequency of PEM English *only* were considered. In the second one ("ENG&WW"), 115 further contexts where restrictives rank highly in the stratified world-wide sample were added. There are two senses in which probabilistic semantic maps can be biased:

- a. choice of languages considered, and in this respect both maps are equally biased to Europe;
- b. choice of contexts sampled, and in this respect "ENG" is entirely biased toward English, whereas "ENG&WW" better reflects world-wide diversity.

Figure 3 plots the two first dimensions of the probabilistic semantic maps (see Wälchli & Cysouw 2012; van der Klis & Tellings 2021) produced with Hamming distance as a dissimilarity distance measure and visualization with Principal Coordinates Analysis (also called Classical Multidimensional Scaling; see Appendix D), displaying French (top) and Latin categories (bottom) (left hand side "WW&ENG", right hand side: "ENG"; see Appendix E for languages and

⁸ Exceptions are colloquial varieties of German and Swedish where *nur* and *ba(ra)* are used as frequent quotative markers (similar to colloquial English *like*). The corpus-version of the German *Volxbibel* NT has 885 occurrences of *nur*, roughly a sixth of which occurs with verbs of saying (as opposed to a total of 125 occurrences of Koine Greek *mon-*). However, the quotative use of 'only' is cross-linguistically rare and seems to be a special feature of colloquial and slang varieties of some Germanic languages. Another European language with a high frequency of an 'only' marker is Erzya Mordvin, where *ans'ak* 'only' is also used as a contrastive connective 'but'.

verses sampled). What I want to emphasize here is the entirely different way in how the two first dimensions sort the domain. In the globally-informed "WW&ENG"-map, Dimension 1 (x-axis) shows the distinction between bare-affirmative uses on the positive pole on the x-axis ("ZERO" in French and Latin) and overt restrictives (negative pole on the x-axis) whereas Dimension 2 sets off negative-with-exception (positive pole of the y-axis).

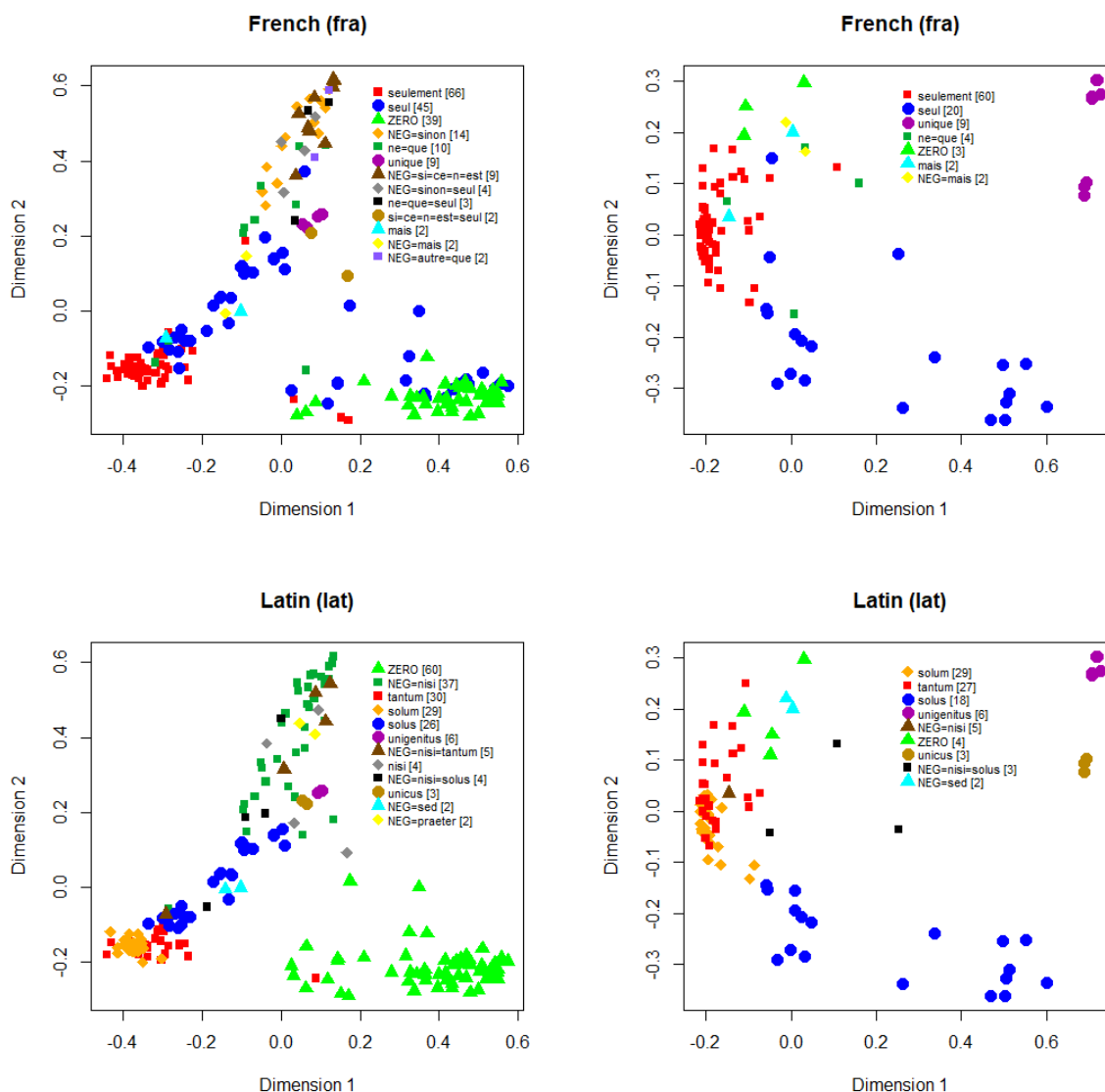


Figure 3: Probabilistic semantic maps with WW&ENG-grid (left) and ENG-grid (right)

The Anglocentric map ("ENG"), however, displays two entirely different first dimensions because most of the bare-affirmative and negative-with-exception contexts are just missing in the input data. Here we get a horseshoe distribution with 'one and only (child)' (top right) then 'unique' then 'alone' (bottom middle) and then the more adverbial contexts (French *seulement*) on the left hand side.

The most important finding of this section is that the bare-affirmative and the negative-with-exception contexts are crucial for the understanding of the semantic domain of 'only', even if they are easily missed when only PEM English *only* is considered.

4. 'Only' and discourse

Various authors have emphasized the role that discourse plays for understanding how 'only' markers are used. According to Beaver & Clark (2008: 248), "the primary function of exclusives {=restrictives, BW} is to mediate the flow of discourse". Here I will first introduce Beaver & Clark's (2008, ch. 10) basic idea, next argue why it seems mistaken from a cross-linguistic perspective and then propose an alternative.

According to Beaver & Clark (2008: 249, 251) "exclusives {=restrictives, BW} challenge an overly strong expectation" and "*make a comment which weakens a salient or natural expectation.*" They have in mind examples such as (9)

- (9) *London police expected a turnout of 100,000 but **only** 15,000 showed up*
(web example; Beaver & Clark 2008: 252)

and claim that the function of 'only' markers is mirative, a category type proposed by DeLancey (1997), who defines it as "grammatical marking of unexpected information." However, Beaver & Clark's (2008) proposal cannot be brought in accordance with our findings in §3. Smaller amounts than expected are not among the most characteristic uses of 'only' markers, since – in these kind of contexts – *only* is entirely redundant and can be missing as in (10), in contrast to characteristic exclusion contexts where 'only' markers prevail in languages of all families.

- (10) *He said 1 Million were coming and 10,000 showed up* (web example)

Put differently, unexpectedness of low amount can be inferred efficiently even if no restrictive marker is present. Beaver & Clark (2008) miss that in a very large number of uses, restrictive marking and bare-affirmative constructions without any marker are each other's natural paraphrases.

We can learn from this that a discourse approach to restrictives has to take into account absence of alternatives not only if expressed with a restrictive such as *only*, but also if expressed contextually. Put differently, more often than not, absence of alternatives is not in need of overt marking, but derives from the context. In many of their uses, 'only' markers are what Sperber & Wilson (1995: 11) call explicatures in relevance theory. Unlike implicatures (also not expressed), explicatures are explicitly communicated, but by the context.⁹ In

⁹ Explicatures and implicatures often occur together, which blurs the picture. In (10) it is not actually stated explicitly that the two clauses are about the same event, this is strictly speaking an implicature. A pure explicature would have to be something like *He said 1 million were*

(10), the absence of a larger alternative is explicitly communicated by the context even if there is no restrictive marker. An empirical method to identify contextually expressed absence of alternatives is to use parallel texts and to look for restrictive markers in other languages in equivalent contexts.

It is traditionally pointed out in the literature that *only* presupposes sets of alternatives (see, e.g., Beaver & Clark 2008: 30). However, in discourse often just one of the excluded alternatives is explicit. In (10), the denied explicit *contextual alternative* is *1 Million*, in (9) *100,000*. Restriction applies to sets¹⁰ which are rarely exhaustively listed, but it is the contextual alternatives that are discourse-prominent. Denial of an alternative plus restriction makes restrictives look very similar to coordination, in particular contrast (*but*), which, according to Umbach (2005: 216), has a "confirm+denial requirement" (parallel to the affirmative and negative components of 'only'). Thus, restriction is similar to discourse relations between subsequent clauses, such as contrast, as, for instance, treated in Rhetorical Structure Theory (Mann & Thompson 1988). However, restriction is largely independent from linear syntax unlike contrast; restriction can be long distance, which attributes to it an anaphoric, rather than a connective, character, as shown in (11) in one of the most salient 'only' contexts in the NT (the contextual alternative is double-underlined).

(11) English (eng, Indo-European, NT40004008-10)

*Again the devil took him to a very high mountain and showed him all the kingdoms of the world and their glory, and he said to him, "I will give to you all these things, if you will fall down and worship me." Then Jesus said to him, "Go away, Satan, for it is written, 'You shall worship the Lord your God and serve **only** him.'"*

In (11), the contextual alternative is *the devil* (also anaphorically picked up by various pronouns). The interpretation of an earlier mentioned referent as an excluded alternative obviously strongly contributes to discourse coherence. Absence of alternatives, with some or several absent alternatives explicitly mentioned in the context, whether marked overtly with a restrictive or covert, thus plays an important role in discourse coherence.

Alternatives can be ordered on a scale and restriction can then be viewed of as splitting a scale into two parts. This predestines words expressing minimal quantities, such as 'one', 'few' or 'small', for collocation with restrictives. In many Pacific languages, restrictive markers are endemic in such words. In Nalca, for instance, 'one' is often expressed by *hnon-ok* 'one-only' and restrictive marking is then easily doubled, as in (12).

coming to event X at time T and 10,000 came to event X at time T. I am grateful to Bruno Olsson for this comment.

¹⁰

Put differently, it is generalizing, and often similar to *all*-clefts (Tellings 2020).

(12) Nalca (nlc; Nuclear Trans New Guinea, NT46012020)

Anasa yana soruk ara gong u-lu-la-bok, nong ara
 like.this foot/leg hand/arm TOP many be-IPFV-PRS.3SG-but body TOP
hnon-ok ok u-lum-la.
 one-only only be-IPFV-PRS.3SG
 'But now there are many members, but one body'.

In (12) we have to do with two restrictions. The first one in *hnon-ok* 'one-only' conventionally sets off 'one' from higher numbers, the second one contextually sets off the entire body from the distinct members of the body. Both restrictions interact with contrast, expressed by *-bok* 'but'.

Contrast and restriction are sometimes equivalent in complex ways, as illustrated with (13) from Mapudungun and its English equivalent.

(13) Mapudungun (arn, Araucanian, NT40008004; 'only' marker in 29 of 121 languages world-wide)

Feypi-a-eyu, iney no rume feypi-la-ya-fi-mi tufa-chi dungu.
 say-FUT-1SG>2SG who NEG even say-NEG-FUT-DIR-2SG this-ATTR matter
Amu-nge, pe-w-faluw-me-nge tati saserdote mew müten,
 go-IMP.2SG see-REFL-SIMUL-ANDAT-IMP.2SG DEF priest OBL **only**
ka...
 and...

'I tell you, don't tell anyone about this matter, **but** go, show yourself to the priest...'

Here, 'the priest' constitutes the restricted referent. Since 'the priest' is the focus of the second clause, contrast (in English) and restriction (Mapudungun) achieve very much the same thing here, but in different ways.

However, in some languages, such as Navajo, illustrated in (14), restrictives may also be associated with what appears to be a contrastive topic.

(14) Navajo (nav, Athabaskan-Eyak-Tlingit, NT40024035)

Yá-díłhił índa nahasdzáán bił yóó'aho-doo-gáát,
 sky-dark/blue then/and earth 3SG.with away-FUT.3-go.ANIM.SG.FUT
nidi shi-zaad t'éiyá doo bił
 but POSS.1SG-word/language **only** NEG 3SG.with
yóó'aho-doo-gáát da.
 away-FUT.3-go. ANIM.SG.FUT NEG
 'Heaven and earth will pass away, but my words will never pass away.'

Note that what is counterexpectative in (14) is not so much the restriction, but the ranking of referents on a scale of time stability. 'Heaven and earth' are naively conceived of as time stable and words spoken by a person are not. So what helps to have a contrastive topic marked with 'only' here is that its position on the scale subject to restriction may come as a surprise.

A very close relationship to coordination occurs for negated restriction: 'not only' is typically followed by 'but also', and coordination with two affirmative conjuncts is sometimes a natural paraphrase. The association with negation is so strong that negation marking in these constructions usually follows the Ross constraint on coordination (Ross 1967: 161), which – paraphrased to a version without transformational movement – says that elements applying to only one conjunct must be located within that conjunct. This means for 'not only' that negation must be constituent negation rather than predicate negation if the predicate is not repeated. The requirement is illustrated with two different constructions in translations into two different Quechuan languages of the same example.

(15) Imbabura Quechua (qvi) and Huallaga Quechua (qub) (Quechuan, NT58012026)

qvi:	[Na	<i>cai</i>	pacha-ta-lla	<u><i>cuyuchi-sha-chu</i></u>],
	NEG	this	earth-OBJ- only	move-FUT.1-NEG
	<i>[ashtahuangarin</i>	<i>jahua</i>	<i>pacha-ndi-mi</i>	<u><i>cuyuchi-sha</i></u>]
	but	superior	earth-also-EV/FOC	move-FUT.1
qub:	<i>Canan-ga</i>	[manami	mundu-lla-ta-chu]	<u><i>icsicya-chi-shaj</i></u> ,
	now-TOP	NEG	world- only -OBJ-NEG	VERB-CAUS-FUT.1
	<i>[man'chä-ga</i>	<i>syëlu-ta-wan-mi]</i>		
	otherwise-TOP	sky-OBJ-also-EV/FOC		
	'...I will shake [not only the earth] [but also heaven].'			

Quechua has a bracketing negation construction *(ma)na(mi)...-chu*, which with the restrictive suffix *-lla* combines to *(ma)na(mi)...-lla...-chu* 'not only' (boldface in (15)). Conjuncts are indicated with brackets. In the Imbabura Quechua (qvi) example, where the verb is repeated and hence located within each conjunct separately, the suffix *-chu* can be suffixed to the verb. In the Huallaga Quechua (qub) example, however, the conjuncts only comprise the two object arguments marked with the case suffix *-ta*, respectively, but the verb is shared. Negation, which only applies to the first conjunct, cannot be marked on the shared verb, which is why negation must be constituent negation (*-chu* is suffixed to the noun phrase).

The effect is visible especially in languages with morphological standard negation. Languages with morphological standard negation using different constituent negation constructions for 'not only' include Tuvian *čülge...eves* [only...not], Mapudungun *müten no* [only not] and Nalca *ok gom* [only not].

We have seen in this section that absence of alternatives – which can be overtly marked with restrictives, but can also be covert – often has implications far beyond the clause to which it applies. Restrictives (overt markers of absence of alternatives) tightly interact with coordination and, like connectives, they contribute to discourse cohesion. However, given the potential of restrictives to contrastively pick up elements elsewhere in discourse as contextual alternatives to restricted referents, restriction is syntactically more flexible than connectives,

which are subject to linear ordering constraints. In contrast constructions, confirm and denial components are conjuncts and follow each other in immediate sequence. Restriction picks up elements to be denied (or, in negated restriction 'not only', not to be denied), which may contribute to long distance text coherence effects. Despite different mechanisms, restriction and contrast often do the same or largely the same job. An interesting question for typology – not addressed here – is therefore whether there might be any tradeoff effects, especially given that – as we will see in §5 – restrictives abound in languages of South America and some languages of South America have been claimed to lack coordination (see, for instance, Everett 2012: 560).

5. Usage patterns in the world-wide distribution

This section delves into the question of how 'only' markers differ in languages of different macro-areas. The section is programmatic and the results are provisional.

Restrictives do not seem to be particularly stable lexically. As closely related languages as Swedish (*bara*) and Danish (*kun*) have entirely different markers, and markers are highly variable throughout families such as Indo-European and Uralic. Whether restrictive affixes are more stable genealogically should be investigated (most Quechuan languages have *-lla* 'only', but Quechuan is not particularly diverse genealogically). However, I will argue in this section that usage types of restrictives as well as some formal properties that derive from usage and frequency, such as affix vs. free form and double vs. single exponence, are very promising objects of study for areal typology.

A first very rough approximation is to compare the automatically counted frequencies for the manually determined search strings (for the values, see Appendix A: f verses) in the stratified sample per area, as displayed in Figure 4. Frequency is shown as the logarithm of frequency per verse. Counting 'only' markers per verse rather than tokens across the whole text mitigates the effect of verbose translations (de Vries 2007). When considering hemispheres, Africa+Eurasia (Afro-Eurasia) is opposed to Oceania and the Americas (Pacific hemisphere), whereas Southeast Asia ("Eurasia-SE") is left out because it is an intermediate zone between the hemispheres. The difference between hemispheres is highly significant in a Mann-Whitney test ($p = 5.617e-10$), also called two-sample Wilcoxon test (R: `wilcox.test()`), a nonparametric test for comparing differences between two independent sets of observations.

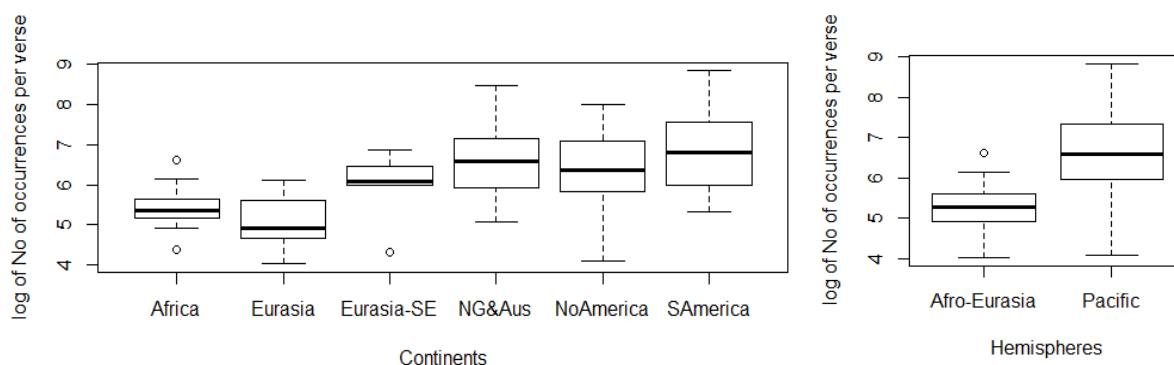


Figure 4: Roughly estimated frequency of 'only' markers per area

However, the result is provisional despite significance. High values have not been manually verified for homonymy. In §2 we encountered the case of *latmul mina* 'only' that also is *min-a* [2SG.M-GEN] 'your'.

When looking at overall frequency, we cannot distinguish between particular functions and cannot determine with certainty that languages actually use the markers in the same ways. Hence, the question arises as to whether different Pacific languages use restrictives in the same ways (as opposed to Afro-Eurasian languages). A profitable strategy is to look for specific types of uses where languages of different areas seem to differ in use. Light uses where many Afro-Eurasian languages use the bare-affirmative strategy might be such a domain; however, as we have seen in §3, light uses are quite heterogeneous, which is why a more coherent smaller usage type is chosen here: *immediate succession* ('immediately') as illustrated in examples (16-19) below.

Immediate succession of a following event can be expressed in many different ways; for instance, with speed adverbs ('quickly', (16)) or other temporal adverbs ('now') or by tail-head linkage ('X; after X-ing, Y', (19)). The rationale behind adding an 'only' expression seems to be the idea of a minimal amount of time between the two subsequent events and hereby denial (explicit restriction) of any not reported intervening events. Restrictives with 'only' occur in a number of lowland and insular languages of New Guinea (such as Kuot in (16)) and are even found in Tok Pisin, the creole language of Papua New Guinea (*wantu tasol* "one-two only" in (17)).

(16) Kuot (kto, Isolate, 41010052)

...*Pa kakalait it ga mumu-run irapien a ga u-i...*
 but quickly **only** and good-PL eye.PL POSS.INAL.3SG.M and 3SG.M-look
 '[Jesus said to him, "Go, your faith has healed you."] And immediately he regained
 his sight [and began to follow him on the road].'

(17) Tok Pisin (tpi, English-based Creole, 41010052)

Na wantu tasol ai bilong en i orait na em i lukluk...
 and "one-two" **only** eye POSS 3SG 3SG OK and 3SG 3SG see
 '... And immediately he regained his sight...'

However, Tok Pisin cannot be the source for the areal distribution since similar uses are also found in some languages of the Indonesian part of the island, as in Momuna (18). Example (18) also illustrates that idiomatic expressions can occur. Momuna *eekee* mostly means 'sun' (and not 'day' or 'time'), which suggests that *eekee tee soonoo* ("sun at only"='immediately') is idiomatic.

(18) Momuna (mqf, Isolate, 41010052)

...*Otù nooe mee to ne nee mee eekee tee soonoo mo otù ne*
 eye bad like man TOP DEM sun at **only** 3SG eye TOP
kuro sa-b-oo...
 good become-PFV-3SG
 '...And immediately he regained his sight...'

Many languages of the Americas also have 'only' markers for 'immediately'. Example (19) from Chimané shows that there may also be other expressions for 'immediately' present in the construction, here *me'-cân-dye* [thus-in-self] 'immediately', but more commonly in Chimané there is just a nominalization of the preceding verb.

(19) Chimané (cas, Mosetén-Chimané, 40020034)

...*chat mu' qui toco'-jeyac-se-bi vej mu'-in.*
 then 3M so.that touch-do-TRANS.EV-APPL eye 3M-PL
 ...*Toco'-ye-dye'-cân mōmo', me'-cân-dye naij-bun in...*
 touch-do-NMLZ-in **only** thus-in-self(=immediately) see-again PL
 '...[Jesus] touched their eyes, and immediately they received their sight...' literally;
 "...touched. Just at the touching Y..."

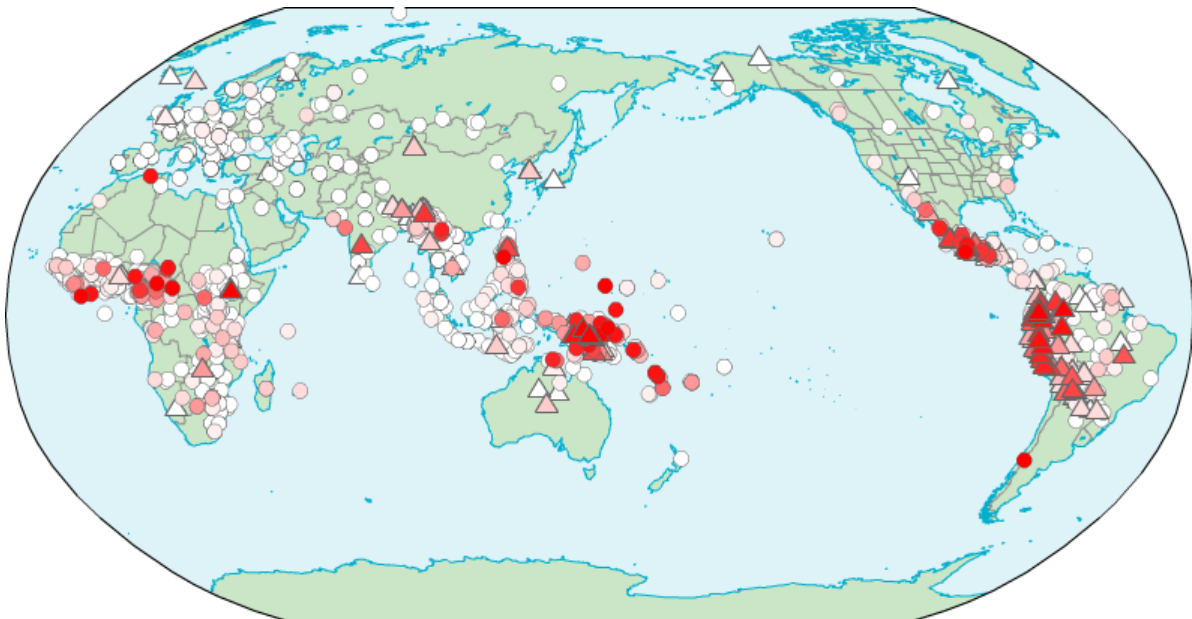
The occurrence of 'only' markers in immediate sequence can be extracted from the NT corpus with very little requirement of manual processing with a certain insecurity whether the marker counted actually is 'only' in all the languages considered. The following quasi-recursive procedure is applied:

- a. roughly approximate the distribution of immediate sequence with English *immediately* (Lexham translation of the NT; 85 tokens in 83 verses);

- b. in that set of verses count the number of 'only' markers (manually determined strings) in the stratified sample;
- c. select languages above a threshold in the stratified sample (at least 14; Momuna has 14), which results in a set of 28 languages, all Pacific;
- d. rank all NT verses according to how well they fit to this distribution in descending order (both restrictives lacking in exactly these languages and restrictives present in all other languages of the sample are penalty points);
- e. with least penalty points we now find the most diagnostic verses for 'immediately', in company with similar verses containing English synonymous expressions such as *at that same time* or *from that hour* which we missed in step (i). Now take 17 of the 20 top ranking examples (penalty 8 to 12), discarding three verses not reflecting the intended semantic domain;
- f. repeat c. with that set which now results in a more accurate set of languages reflecting the domain (23 of the 121 sample languages);
- g. repeat d. and e. with that set and keep all 20 of the top examples (see Appendix F), all containing contexts with the intended semantics (penalty 3 to 10);
- h. now extend the search space to all 1629 translations and 1243 languages where we have at least one automatically extracted candidate for an 'only' marker, take only the best scoring automatically detected string for 'only' (word-form or letter sequence within a word), count how often it occurs in the 20 verses in the set in g. and plot the result on a map: this is Map 1. Translations with more than 6 tokens are listed in Appendix F (Tok Pisin is not included since it has only 6 tokens).

As expected, Map 1 largely reflects strong areal patterning. Redness symbolizes the frequency of 'only' as detected in the immediate sequence domain (and triangles are affixes and stems rather than word-forms for 'only'). Note especially the lack of 'only' in Europe and Central Eurasia (many European languages are represented with several translations in the corpus and the one with the highest value is always plotted). The automatic search procedure suggests that there are some few candidates in Africa, in the Philippines and in South East Asia (all these markers should be checked manually with dictionaries and grammars where available). As is very often the case with respect to linguistic features, Africa turns out to be more diverse than Europe and Central Eurasia. Just to mention one example, Kabyle *imiren kan* 'immediately' is an interesting outlier (*kan* 'only' does not have a particularly high frequency, however). However, there are few African languages with 'only' in immediate sequence possibly

detected as opposed to many languages in New Guinea, Mesoamerica and Andean South America.



Map 1: Restrictives in immediate sequence (frequency visualized by degree of redness)*

*The maps are produced with the WALS Interactive Reference tool by H.-J. Bibiko

The method applied has a limited coverage in the Pacific region. Many Pacific languages have double exponence of 'only' and often, in contexts such as immediate sequence, only one of the two markers occurs (e.g. Sulka *gi ... tuk*, both *gi* and *tuk* meaning 'only'; *tuk* happens to be top-ranking for 'only', so *gi hi to* 'immediately' is missed, the same holds for Cherokee <*gila-qo*> /khila=kwu/ [just.now=only] 'immediately').

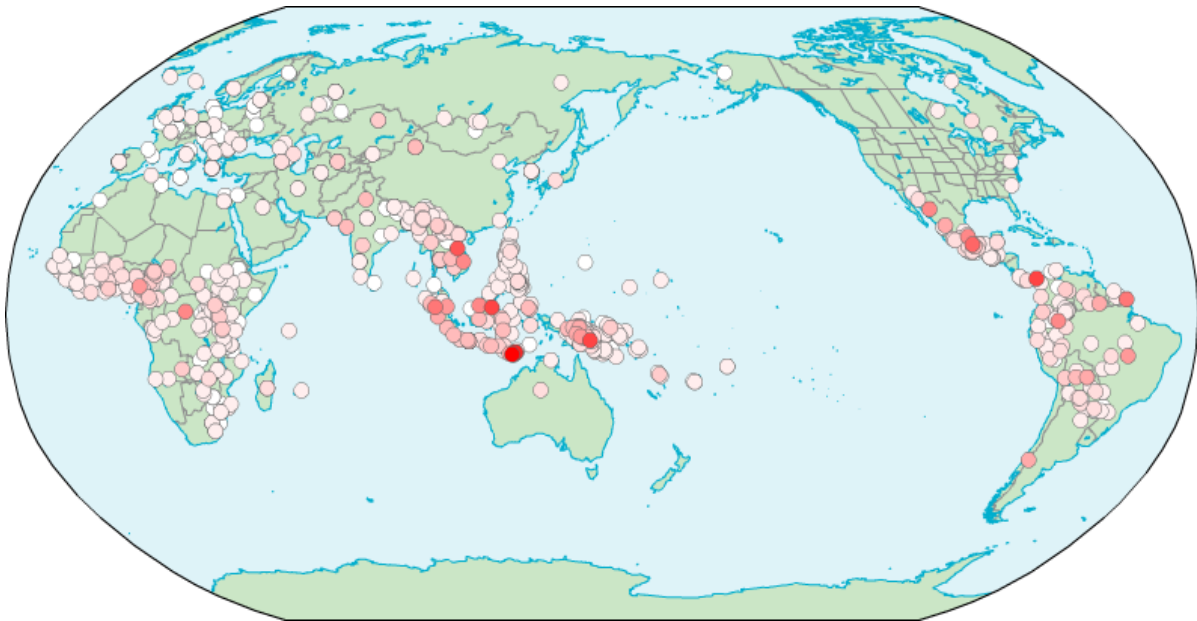
Now how can it be that the distribution of uses of restrictives reflects a macro-areal distribution whose origin is likely to go back to precolonial times if 'only' markers are rather unstable diachronically within language families? It seems to me that the most probable explanation is that the usage difference, which can be captured in NT translations, derives from very old differences in discourse (*parole*) rather than grammatical systems (*langue*). Interestingly, these properties of spoken discourse percolate to written Bible translations (for the relationship between Bible translations and primary orality, see de Vries 2000) and to Creole languages, such as Tok Pisin, spoken by the same speech communities as second languages. It is well-known from ethnography of speaking (Hymes 1964¹¹, Sherzer 1983) that different speech communities do not only use different languages, but also have different ways of speaking or different "ways of saying things" (Schapper & de Vries 2018: 482). Languages

¹¹ Hymes (1964: 2-3) emphasizes "...the need for fresh kinds of data, to the need to investigate directly the use of language in contexts of situation so as to discern patterns proper to speech activity, patterns which escape separate studies of grammar..."

spoken in certain areas do not only have significant overrepresentations of certain grammatical structures (Nichols 1992), but can also have preferred discourse strategies. Languages in New Guinea, for instance, are well-known for their stacking of topicalization and for their abundant use of quotations also beyond quotation proper (de Vries 2006, Heeschen 1994, Himmelmann & Riesberg forthc.), both features percolating to Bible translations as well (for topicalization, see Wälchli 2022). It is hence reasonable to assume that the explanation for the patterns found here is that Pacific and Afro-Eurasian language populations must have differed in their ways of using restrictives in discourse already for a very long time.

Moreover, there is reason to believe that there are not only functional, but also formal differences in restrictives across language populations of different areas (the latter ultimately caused by the former). Even though it is problematic to strictly delimit free from bound markers (Haspelmath 2011), sheer orthography suggests that bound restrictives are more common in Pacific than in Afro-Eurasian languages (see Map 1 where triangles stand for bound markers). There seems to be some correlation between marker frequency and boundness. The recurrent occurrence of *double exponence* of 'only' marking in many Pacific languages – often with one restrictive preceding and another one following a restricted noun phrase – might be another case in point. Map 2 shows a nearly automatically obtained map approximating frequency of such kinds of double marking. The algorithm for it consists of the following steps:

- a. Take all topmost extracted marker sequences in Slots 1 and 2 from the extraction of restrictives, e.g. from Hmong Daw {[xwb]1 [tsuas]2 [tib]3 } (see Table 1) take the word-form strings $x1 = \text{"xwb"}$ and $x2 = \text{"tsuas"}$ and for Lowland Tarahumara {[pe]1 [>cho#<]2 [bi'lepi]3 } take $x1 = \text{"pe"}$ and $x2 = \text{"cho"}$.
- b. Count the number of occurrences of the regular expressions $x1 + \text{"S*"} + x2$ and $x2 + \text{"S*"} + x1$ (both of them, since the algorithm does not know anything about the word or morpheme order of the two markers) in the 501 verses of the 'only' domain that has been used to extract restrictives, however, after disregarding verses where English *alone* is common, since there is reason to assume that words for 'alone' and 'only' occasionally combine in many languages. This targets such strings as Mapudungun *re tapül müten [pure leaf only]* 'only leaves' and Lowland Tarahumara *pe sawá-la-cho [only leaf-POSS-only]* 'only leaves' (both NT40021019). Also add cases where there are two or three words in-between (regular expressions $x1 + \text{"S* S* S*"} + x2$ and $x1 + \text{"S* S* S*"} + x2$). Pick the higher of the two values measured (the one that happens to have the right word or morpheme order). The result is shown in Map 2.



Map 2: Frequency of bracketing double restrictive constructions visualized by degree of redness (with 'alone' filtered out; automatic measurement)

Map 2 shows a distribution similar to, but also slightly different from, Map 1. Double exponence of restrictives is, for instance, very common in Indonesian languages (e.g., Indonesian ***hanya Bapa saja*** 'only the Father') and in Eurasia it appears quite often in some Easternmost Turkic languages (e.g., Kazakh ***tek meni ğana*** 'only me'), but very rarely in geographically Western Turkic languages.

In many Pacific languages, 'only' is also often accompanied by some sort of intensifier, such as Hopi *pas* X=sa [INTENS X=only] and these are not captured by the algorithm. Hopi *pas* is one of Whorf's (1939: 83) "tensors", "...a special part of speech [...] a huge class of words, denotes only intensity, tendency, duration, and sequence", which play an important role in Whorf's argument on why Hopi is so different from Standard Average European. Further research will also have to take such intensifiers or "tensors" into account.

We have to interrupt here at a point where we have just started investigating the areal differences in the use of restrictives. There is, however, an important takeaway message already. World-wide corpus-based typology has some potential to reveal macro-areal differences in the function and form of 'only' expressions that might reflect ancient differences in discourse across language populations. The most important function of corpus-based typology here is heuristic. Using quantitative methodology first yields a wealth of data that can be further analyzed qualitatively with the potential of providing both positive and negative evidence for areal distribution patterns. The qualitative results may then also serve for the evaluation of the quantitative procedures so that these can be further refined. The findings may also be a starting point to look further at languages not represented in the corpus. Bugaeva et al. (2022) have recently

posed the question whether Ainu should be considered a "Pacific Rim" language. The Ainu Bible translation is not digitized yet, but a quick look at it reveals that double restrictive marking is quite common in Ainu: **ouse ham patek** 'only leaves' (NT40021019) (Ainu, however, does not seem to use 'only' in immediate sequence).

6. Conclusions

This paper has addressed restrictives ('only' markers) by using a world-wide parallel text corpus, thus pursuing both a massively cross-linguistic and an entirely usage-oriented approach. Quantitative tools have been indispensable to identify major trends in a large body of fuzzy data, but qualitative methodology has been equally indispensable to verify the validity of the results obtained. As far as theory is concerned, massively cross-linguistic and corpus-linguistic approaches set high standards for a universal applicability of the notions deployed. Such a very general notion of broad applicability introduced here is "generally expressed meaning" (GEM). GEMs are meanings which correspond to clusters of forms in the world's languages. GEMs are modelled as sets of language-specific markers instantiating a category type with cross-linguistically highly similar, but not identical, uses and by a set of language-independent usage contexts that can be expected to be expressed by markers instantiating the GEM with highly different degrees of probability.

Obviously, many important questions in linguistics require a global perspective: how common a category type is and how a parochial, language-specific, instantiation of it relates to the more general picture. This is illustrated here by comparing the GEM 'only' to the parochially expressed meaning (PEM) of English *only*.

It has been further shown that corpus linguistics may be an important tool for areal typology (the investigation of macro-areal patterns across languages). Grammar is organized in terms of systems, we know that systems are inherited within language families and there is a bewildering number of language families that cannot be easily further reduced in historical linguistics. Thus, macro-areal, especially hemispheric patterns, in areal typology are a puzzle. However, our results suggest that at least some of these patterns are due to *parole* (discourse) and that it is not system continuity in language families that is at issue, but rather different ways of speaking, which quite amazingly even trickle down to written Bible translations. Corpus-based typology may help us understand not only how language structure emerges from language use but also how it continues to interact with language use in special ways.

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Abbreviations in interlinear glosses

1 first person; 2 second person; 3 third person; ANDAT andative; ANIM animate; APPL applicative; ATTR attributive; CAUS causative; CIRC circumfix; COMP marker of standard of comparison; DAT dative; DEF definite; DEM demonstrative; DIR direct; EV evidential; FOC focus; FUT future tense; GEN genitive; HORT hortative; HUM human; IMP imperative; INAL inalienable; IND indicative; IPFV imperfective; M masculine; MED medial (not sentence final) verb form; NEG negation; NMLZ nominalization; OBJ object; OBL oblique; PFV perfective; PL plural; POSS possessive; PROH prohibitive; PRS present tense; PST past tense; REFL reflexive; REL marker of relative clause; SG singular; SIMUL simulation; TOP topic marker/selective; TRANS transitive

Appendix A: 121 language sample, manually determined strings and automatic extraction with world-wide seeds and with English seeds

Trans- lation	Language	Family	Manually determined search strings	f verses	WW seeds Max 35 / 501 verses t=4.6	Eng seeds Max 2 / 508 verses t=4.6
naq	Nama (Namibia)	Khoe-Kwadi	lguisa lguiba lguina	139	[>#lgui<]1	[>#lgui<]1
ach	Acoli	Nilotic	keken	256	[keken kene]1	[keken]1 [kono]2
amf	Hamer- Banna	South Omotic	bish	298	[bish >bish<]1 [dayma]2 [ab]3	[bish ab]1
dje	Zarma	Songhay	hinne	146	[hinne]1 [kala]2	[hinne]1 [kala]2 [day]3
dtb	Toro So Dogon	Dogon	sai	267	[sai]1	[sai]1
gbo	Northern Grebo	Kru	sosö	176	[sosö ë]1	[sosö ë]1
gmvl	Gamo	Ta-Ne-Omotic	xalala xalla	199	[xalala xalla]1	[xalala xalla]1
gukl	Northern Gumuz	Gumuz	ʼaśə kaśə	754	[ʼaśə kaśə]1 [mädanə]2	[ʼaśə kaśə]1
mor	Moro	Heibanic	ikərən	80	[ikərən illi]1 [gunto]2	[ikərən illi]1
mur	Murle	Surmic	doon	444	[doon nɔkɔ]1 [tɔr olla]2	[doon]1 [olla]2
neb	Toura (Côte d'Ivoire)	Mande	lengdo	199	[lengdo]1	[lengdo]1
sba	Ngambay	Central Sudanic	ba	465	[ba]1	[ba]1
som	Somali	Afro-Asiatic	keli	212	[keliya]1 [maahee mooyaane] 2	[keliya]1 [maahee mooyaane] 2
udu	Uduk	Koman	jasi	182	[jasi]1 [te]2	[jasi]1 [te]2
wol	Wolof	Atlantic-Congo	rekk	223	[rekk]1 [dul]2	[rekk dul]1
eus- batua	Basque	(Isolate)	bakarrik	115	[bakarrik bakarra ez ik]1 [besterik]2	[bakarrik ezik]1 [besterik]2
hin- latin	Hindi	Indo-European	keval	108	[keval chhod]1 [hee]2	[keval chhod]1
kat- revise d	Georgian	Kartvelian	მარტო	56	[მარტო მხოლოდ გ არდა]1	[მხოლოდ მარტო გა რდა]1

Trans- lation	Language	Family	Manually determined search strings	f verses	WW seeds Max 35 / 501 verses t=4.6	Eng seeds Max 2 / 508 verses t=4.6
tab	Tabasara n	Nakh- Daghestanian	tiаn	448	[>tiаn#<]1 [анжагъ гъайри не инки]2	[>tiаn#<]1 [анжагъ гъайри неи нки]2
kan- latin	Kannada	Dravidian	mātra	124	[mātra obbanē]1 [kēṣala]2	[mātra obbanē]1 [kēṣala]2
kpv	Komi- Zyrian	Uralic	cōмын	270	[cōмын]1	[cōмын]1
tyv	Tuvinian	Turkic	чүглe	290	[чүглe]1 [өске]2	[чүглe]1 [өске]2
khk	Halh Mongolian	Mongolic- Khitan	zovhon	91	[zovhon oor]1 [gants l]2	[zovhon oor]1 [l gants]2
kor- revise d	Korean	Koreanic	만	150	[>만#<]1 [>뽕<]2	[>만#<]1 [>나라#<]2 [>뽕<]3
jpn- newwo rld	Japanese	Japonic	だけ	147	[>だけ<]1 [>ただ<]2	[>だけ<]1 [>ただ<]2
caq	Car Nicobares e	Austroasiatic	höng nöng töng öthöng	979	[höng]1 [töng]2 [nöng]3	[höng]1 [töng]2 [nöng]3
mjw	Hills Karbi	Sino-Tibetan	chot	400	[>chot< apar]1 [inutnat]2	[>chot< apar]1 [inutnat]2
mww	Hmong Daw	Hmong-Mien	xwb	651	[xwb]1 [tsuas]2 [tib]3	[xwb]1 [tsuas]2 [tib]3
tha- easy	Thai	Tai-Kadai	เท่านั้น	75	[เท่านั้น]1 [เดียว นอกจาก]2 [แค่]3 [เพียง]4	[เท่านั้น]1 [แค่ นอกจาก]2 [เดียว]3 [เพียง]4
tgl- 1996	Tagalog	Austronesian	lamang	434	[lamang maliban]1 [iisa sarili]2	[lamang]1
aak	Ankave	Angan	ná nánini	354	[ná]1 [sa]2 [woni nánini]3 [maríái]4	[sa]1 [maríái]2 [ayí]3
aau	Abau	Sepik	-aw kiaw	2513	[>-aw<]1 [hiykwaw]2	[>-aw#<]1
agg	Angor	Senagi	yangir	1071	[yangiri]1 [moani]2	[yangiri]1 [moani]2
amm	Ama (Papua New Guinea)	Left May	saso soso	1208	[saso]1 [>soso<]2	[saso]1
amn	Amanab	Border	mungu	733	[mungu]1	[onigig]1

Trans- lation	Language	Family	Manually determined search strings	f verses	WW seeds Max 35 / 501 verses t=4.6	Eng seeds Max 2 / 508 verses t=4.6
ape	Bukiyip	Nuclear Torricelli	atij atu ot	2918	[atin]1 [atunu atich]2 [meyoh]3	[meyoh]1 [atunu atich]2
big	Biangai	Goilalan	keke	275	[keke yeik]1 [wamenak >#wame nak<]2	[keke yeik]1
bon	Bine	Eastern Trans- Fly	taatu	526	[taatu]1	[taatu]1
bvz	Bauzi	Geelvink Bay	ta	1601	[gi]1	[gi]1
byx	Qaqet	Baining	naik	272	[naik ngerek]1 [qatikka]2 [katikka]3 [quanaska]4	[naik]1 [qatikka]2
dgz	Daga	Dagan	genat	380	[megenat mugenat] 1	[megenat mugenat]1
ian	Iatmul	Ndu	mina	826	[mina]1	[mina]1
khs	Kasua	Bosavi	semetei	1448	[semetei]1	
kpx	Mountain Koiali	Koarian	unaha	477	[unaha igae]1 [igaeu]2	[unaha]1
kto	Kuot	(Isolate)	it namurit talamet iriet	857	[it]1 [talamet]2 [iriet]3	[it]1 [iriet]2 [talamet]3
kxw	Konai	East Strickland	nōu	3488	[>nōu#<]1	[>nōu#<]1
mnx	Sougb	East Bird's Head	dous	1812	[dous dousero]1	[dous dousero]1
mqf	Momuna	Somahai	soonoo	1264	[soonoo]1 [soonooke]2	[soonoo]1
msy	Aruamu	Lower Sepik- Ramu	ra ram rama	4477	[>ra#<]1	[>ra#<]1
nas	Naasioi	South Bougainville	narung naing nanung	818	[naing masikung]1 [>maing<]2	[deeko']1 [naing]2
nlc	Nalca	Nuclear Trans New Guinea	ok hnonok nok	1065	[ok]1 [hnonok]2	[ok]1
ppo	Folopa	Teberan	maaté	353	[>aat<]1 [betə]2	[>aat<]1
roo	Rotokas	North Bougainville	raga	3586	[raga]1 [kataitoa]2	[raga]1 [kataitoa]2
sua	Sulka	(Isolate)	tuk	302	[tuk]1	[tuk]1
tlb	Tobelo	North Halmahera	dika	455	[duga-duga]1 [dika]2	[duga-duga]1 [dika]2
xla	Kamula	Kamula- Eleva	hatlo	372	[isikimi]1 [hatlo]2 [tlo]3	[isikimi]1 [hatlo]2 [tlo]3

Trans- lation	Language	Family	Manually determined search strings	f verses	WW seeds Max 35 / 501 verses t=4.6	Eng seeds Max 2 / 508 verses t=4.6
yuj	Karkar- Yuri	Pauwasi	saráp	573	[saráp]1 [mwar]2	[saráp]1 [mwar]2
yva	Yawa	Yawa-Saweru	obo bo	455	[obo bo]1	[obo bo]1 [mamo]2 [ma]3
ata	Pele-Ata	(Isolate)	si	4796	[>usi#<]1 [>esi< >asi#<]2 [>isi#<]3	[>isi#<]1
faa	Fasu	(Isolate)	hákaša	263	[hákaša]1	[hákaša]1
knv-fly	Tabo	(Isolate)	kapiyate kapiyat	163	[kapiya]1 [ākātuwā]2 [kapiyate]3	[kapiya]1 [ākātuwā kapiyate]2
wiu	Wiru	(Isolate)	odene	454	[odene]1 [>- kama#<]2	[odene pa]1
yle	Yele	(Isolate)	mo	244	[ngmidi]1 [mo nuw:o]2	[mo]1
yrb	Yareba	Yareban	torowa	545	[torowa]1	[torowa]1
bvr	Burarra	Maningrida	wupa	840	[wupa]1 [ngardapa]2 [an- ngardapiya]3	[wupa]1 [ngardapa an- ngardapiya]2
nuy	Wubuy	Gunwinyguan	-bugij -wugij	1165	[>ugij<]1	[>-bugij<]1
wim	Wik- Mungkan	Pama- Nyungan	thonakam	354	[thonakam]1	[thonakam]1
esi	North Alaskan Inupiatun	Eskimo-Aleut	kisi	175	[>iñña< kisi]1	[>iñña< kisi]1
nav	Navajo	Athabaskan- Eyak-Tlingit	t'éiyá t'éí	440	[t'éiyá t'éí]1	[t'éiyá t'éí t'óó]1
chr	Cherokee	Iroquoian	uwasv unvsv aqvsv cvsv igvsv ogvsv icvsv oginvsv isdvsv owasv	654	[uwasv gesv]1	[uwasv]1
mic	Mi'kmaq	Algic	pas'g	693	[pas'g]1	[pas'g]1
chd	Highland Oaxaca Chontal	Tequistlatecan	le'a	588	[le'a]1	[le'a]1
huv	San Mateo del	Huavean	áwan óiquian áagan ómban átan éjan	2957	[áagan]1	[áagan]1

Trans- lation	Language	Family	Manually determined search strings	f verses	WW seeds Max 35 / 501 verses t=4.6	Eng seeds Max 2 / 508 verses t=4.6
	Mar Huave		ámban úxan ájan áyan íwan ócan úyan ójan úüban íünan énan ánan ónan íülan úwan			
kek- 2005	Kekchí	Mayan	ka'aj	211	[ka'ajwi' ka'aj]1 [yal]2	[ka'ajwi' ka'aj]1 [yal]2
pua	Western Highland Purepech a	Tarascan	jku ntku	2122	[>jk<]1 [>usi<]2 [>ntk<]3	[>kusi< >ku#<]1
tac	Lowland Tarahuma ra	Uto-Aztecan	pe pe'	1830	[pe]1 [>cho#<]2 [bi'lepi]3	[pe]1 [>cho#<]2
tos	Highland Totonac	Totonacan	xm̥an	571	[xm̥an]1	[xm̥an]1
zaa	Sierra de Juárez Zapotec	Otomanguean	rubá	346	[teruba àteruba]1	[>rub<]1 [tsua']2
zos	Francisco León Zoque	Mixe-Zoque	na's	60	[na's más]1 [sólo]2	[na's]1
jic	Tol	Jicaquean	p'in	1191	[p'in]1	[p'in]1
miq	Mískito	Misumalpan	baman	466	[baman]1	[baman]1
agr	Aguaruna	Chicham	imá	396	[imá ayatak]1 [duke]2	[imá ayatak]1
amr	Amarakae ri	Harakmbut	yo'da	463	[>yo'da#<]1	[>yo'da#<]1
apn	Apinayé	Nuclear- Macro-Je	pix	1020	[pix]1	[pix]1
arl	Arabela	Zaparoan	saaja saa	1065	[saaja]1 [saa]2	[saaja]1 [saa]2
arn	Mapudung un	Araucanian	müten	746	[müten]1 [re]2	[müten]1 [re]2
auc	Waorani	(Isolate)	que	6939	[ingampa]1	
ayr- 2011	Central Aymara	Aymaran	ki	5051	[>kiw<]1 [>#sapa<]2	[>kiw<]1

Trans- lation	Language	Family	Manually determined search strings	f verses	WW seeds Max 35 / 501 verses t=4.6	Eng seeds Max 2 / 508 verses t=4.6
bmr	Muinane	Boran	idi	265	[>coro#< idi#boro]1 [>iro#<]2	[idi#boro>coro#<]1 [>iro#<]2
cag	Nivacle	Matacoan	ve'lh	992	[>ve'lha<]1 [tsi'sha]2 [atesha]3	[>ve'lha<]1 [tsi'sha]2
cap- 2004	Chipaya	Uru-Chipaya	qaś	1420	[>qaś<]1	[>qaś<]1
cas	Mosetén- Chimané	(Isolate)	momo' mum'	733	[momo']1	[momo']1
cax- 2002	Lomeriano -Ignaciano Chiquitan o	Chiquitano	tai	1902	[>tai<]1 [>kunauntaña<]2	[>tai<]1 [kunauntañati]2
cbt	Shawi	Cahuapanan	chin	4077	[>chin#<]1	[>chin#<]1
cbu	Candoshi- Shapra	(Isolate)	mari	1774	[>mari<]1	
cbv	Kakua	Kakua-Nukak	jeh	2239	[>jeh#<]1	[>jeh#<]1
ceg	Chamaco co	Zamucoan	shi	2108	[shi]1 [sohmira]2	[shi]1
con	Cofán	(Isolate)	yi ñi	1334	[>yi#<]1 [aquia]2	[>yi#<]1 [aquia]2
cul	Culina	Arawan	ojar	525	[>ra#<]1 [>#ojari<]2	[>ra#<]1 [ojari]2
des	Desano	Tucanoan	dihta	398	[dihtare]1 [dihta]2	[dihta]1 [dihtare]2
emp	Northern Emberá	Chocoan	ababe	207	[ababe]1	[ababe]1
gug	Paraguay an Guaraní	Tupian	nte	743	[>nte<]1	[>nte<]1
guh	Guahibo	Guahiboan	ë	400	[saya]1 [>#ë<]2	[saya]1 [>#ë<]2
hix	Hixkaryán a	Cariban	marma	230	[marma]1	[marma]1
hto	Minica Huitoto	Huitotoan	dama	529	[dama fia dani]1 [daade]2	[dama fia]1 [daade]2
kbc	Kadiwéu	Guaicuruan	oka oki	1498	[>ok<]1	[>ok<]1
kbn	Camsá	(Isolate)	nñe	941	[nñe]1	[nñe]1
kog	Cogui	Chibchan	za zañki	1466	[za]1 [ezuamé]2 [ezuañgaba]3	[za]1 [nuxa]2
kwi	Awa- Cuaiquer	Barbacoan	ain min	3795		
leg	Lengua	Lengua- Mascoy	acvamlha apvamlha	317	acvamlha]1 [apvamlha]2	[acvamlha]1 [apvamlha]2

Trans- lation	Language	Family	Manually determined search strings	f verses	WW seeds Max 35 / 501 verses t=4.6	Eng seeds Max 2 / 508 verses t=4.6
			apquilvamlha sicvamlha ningilvamlha			
mbj	Nadëb	Naduhup	jääm	278	[jääm had'yyt]1	[jääm had'yyt]1
nab	Southern Nambikuá ra	Nambiquaran	so'lxí³	916	[so'lxí³]1	[so'lxí³]1
pab	Parecís	Arawakan	taita takita	495	[taita]1 [haterore]2	[taita]1
pbb	Páez	(Isolate)	rrá	2636	[>rrá<]1	[>rrá<]1
qvi	Imbabura Highland Quichua	Quechuan	lla	5782	[>lla<]1	[>alla<]1
shp	Shipibo- Conibo	Pano-Tacanan	bicho	330	[>bicho<]1 [>res<]2	[>res<]1 [>bicho<]2
tca	Ticuna	Ticuna-Yuri	icata ĩcata	298	[>tama#<]1 [>xica<]2 [>xĩca<]3	[>tama#<]1 [>xica<]2 [>xĩca<]3 [>mare<]3
ura	Urarina	(Isolate)	acha	3714	[>acha<]1	[>acha<]1 [laen]2
xsu	Sanumá	Yanomamic	sisá	472	[>#sisá<]1 [sami páo]2 [páoö]3	[>#sisá<]1 [páo]2 [páoö]3
yad	Yagua	Peba-Yagua	vinu	399	[vinu]1	[vinu]1
yuz	Yuracaré	(Isolate)	jti	3048	[>jti<]1 [lëmmui]2 [candala]3	[>jti<]1 [lëmmui]2

Appendix B: Extracting markers corresponding to an extensional meaning

The rightmost two columns report the result of an automatic extraction of markers with a collocation measure. For a similar procedure, see Dahl & Wälchli (2016). The extraction algorithm, implemented in a Python program, is largely the same as described in Wälchli & Sölling (2013).

All word-forms and all continuous character sequences within word-forms are marker candidates for being extracted. In order to be extracted, a marker must collocate with the search distribution (the functional domain, in practice modelled as the set of verses that contains typical restrictive contexts, may be called "seed distribution"). Two search distributions are compiled, one deriving from manually extracted search strings of a stratified sample of 121 languages (all verses where a "seed" marker occurs at least 35 times) and one, entirely Anglocentric, containing all verses where English *only* occurs more than once across 32 different English translations of the NT. The collocation measure used is *t*-value and the threshold is $t=4.6$. Extraction happens recursively starting with the marker candidate with the highest *t*-value. Extraction of further markers (if any) happens in terms of a paradigmatically and syntagmatically ordered set of marker complexes as described in Wälchli & Sölling (2013). Since the search domain also collocates with negation and 'one', markers for negation and 'one' are filtered out (see Wälchli 2019) whenever the collocation value is better with negation (simplistically modelled by Polish *nie*) or 'one' (simplistically modelled by English *one*). This does in practice not remove all words for 'one', especially if 'only' and 'one' are expressed by the same string. In order to block highly frequent items which easily have high collocation values, a further requirement is that the *t*-value for the entire marker complex extracted so far must increase for every additionally extracted marker.

Appendix C: PEM *only* vs. GEM 'only'

Table C.1: Verses with largest difference between PEM *only* and GEM 'only'

Verse	Text	% ENG except	% ENG not only	% ENG only	% WW 'only'	% Difference
40004004	But he answered and said, "It is written, 'Man will not live on bread alone, but on every word that comes out of the mouth of God.'"	0	0	15,6	83,5	-67,9
42004004	And Jesus replied to him, "It is written, 'Man will not live on bread alone.'"	0	0	15,6	81	-65,4
42010022	All things have been handed over to me by my Father, and no one knows who the Son is except the Father and who the Father is except the Son, and anyone to whom the Son wants to reveal him."	63	0	12,5	73,6	-61,1
40011027	All things have been handed over to me by my Father, and no one knows the Son except the Father, and no one knows the Father except the Son and anyone to whom the Son wants to reveal him.	66	0	12,5	71,9	-59,4
41010018	So Jesus said to him, "Why do you call me good? No one is good except God alone.	63	0	15,6	74,4	-58,8
66019012	Now his eyes were like a flame of fire, and on his head were many royal headbands having a name written that no one except he himself knows.	28	0	12,5	70,2	-57,7
46001014	I give thanks to God that I baptized none of you except Crispus and Gaius,	78	0	3,1	60,3	-57,2
42006032	"And if you love those who love you, what kind of credit is that to you? For even sinners love those who love them!	0	0	12,5	69,4	-56,9
66002017	The one who has an ear, let him hear what the Spirit says to the churches. To the one who conquers, I will give to him some of the hidden manna, and I will give to him a white stone, and on the stone a new name written, that no one knows except the one w	53	0	9,4	65,3	-55,9

47012002	I know a man in Christ fourteen years ago — whether in the body I do not know, or outside the body I do not know, God knows — such a man was caught up to the third heaven,	0	0	9,4	64,5	-55,1
42012041	And Peter said, "Lord, are you telling this parable for us, or also for everyone?"	0	0	6,3	60,3	-54
42005021	And the scribes and the Pharisees began to reason, saying, "Who is this man who speaks blasphemies? Who is able to forgive sins except God alone?"	22	0	21,9	75,2	-53,3
42018019	And Jesus said to him, "Why do you call me good? No one is good except God alone.	59	0	21,9	75,2	-53,3
66014003	And they were singing something like a new song before the throne and before the four living creatures and the elders, and no one was able to learn the song except the one hundred forty-four thousand who had been bought from the earth.	63	0	9,4	62	-52,6
41011013	And when he saw from a distance a fig tree that had leaves, he went to see if perhaps he would find anything on it. And when he came up to it he found nothing except leaves, because it was not the season for figs.	16	0	18,8	69,4	-50,6
46002002	For I decided not to know anything among you except Jesus Christ and him crucified.	66	0	15,6	66,1	-50,5
43004042	And they were saying to the woman, "No longer because of what you said do we believe, for we ourselves have heard, and we know that this one is truly the Savior of the world!"	0	0	0	50,4	-50,4
46002011	For who among men knows the things of a man, except the spirit of the man that is in him? Thus also no one knows the things of God except the Spirit of God.	75	0	18,8	68,6	-49,8
42009036	And after the voice had occurred, Jesus was found alone. And they kept	0	0	9,4	57,9	-48,5

	silent and told no one in those days anything of what they had seen.					
43003013	And no one has ascended into heaven except the one who descended from heaven — the Son of Man.	50	0	6,3	54,5	-48,2
43017012	When I was with them, I kept them in your name, which you have given to me, and guarded them, and none of them has perished except the son of destruction, in order that the scripture would be fulfilled.	69	0	12,5	60,3	-47,8
46010024	Let no one seek his own good but the good of the other.	0	3	12,5	59,5	-47
42006033	For even if you do good to those who do good to you, what kind of credit is that to you? Even the sinners do the same!	0	0	12,5	59,5	-47
61002005	and did not spare the ancient world, but preserved Noah, a proclaimer of righteousness, and seven others when he brought a flood on the world of the ungodly,	3	0	9,4	56,2	-46,8
59002019	You believe that God is one; you do well. Even the demons believe, and shudder!	0	0	6,3	52,9	-46,6
45004014	For if those of the law are heirs, faith is rendered void and the promise is nullified.	0	0	3,1	49,6	-46,5
49004005	one Lord, one faith, one baptism,	0	0	3,1	49,6	-46,5
62003018	Little children, let us not love with word or with tongue, but in deed and truth.	0	6	15,6	62	-46,4
40016004	An evil and adulterous generation seeks for a sign, and a sign will not be given to it except the sign of Jonah!" And he left them and went away.	59	0	12,5	58,7	-46,2
50003019	whose end is destruction, whose God is the stomach, and whose glory is in their shame, the ones who think on earthly things.	0	0	18,8	64,5	-45,7
49004004	one body and one Spirit (just as also you were called with one hope of your calling),	0	0	3,1	48,8	-45,7

44027010	saying to them, "Men, I perceive that the voyage is going to end with disaster and great loss, not only of the cargo and the ship, but also of our lives!"	0	66	65,6	33,9	31,7
40009021	for she said to herself, "If only I touch his cloak I will be healed."	0	0	65,6	33,9	31,7
43001014	And the Word became flesh and took up residence among us, and we saw his glory, glory as of the one and only from the Father, full of grace and truth.	0	0	81,3	48,8	32,5
48002010	They asked only that we should remember the poor, the very thing I was also eager to do.	0	0	81,3	48,8	32,5
50001027	Only lead your lives in a manner worthy of the gospel of Christ, so that whether I come and see you or am absent I hear your circumstances, that you are standing firm in one spirit, with one soul contending side by side for the faith of the gospel,	0	0	78,1	44,6	33,5
58011017	By faith Abraham, when he was tested, offered Isaac, and the one who received the promises was ready to offer his one and only son,	0	0	75	40,5	34,5
44002015	For these men are not drunk, as you assume, because it is the third hour of the day.	0	0	59,4	24	35,4
45013005	Therefore it is necessary to be in subjection, not only because of wrath but also because of conscience.	0	78	81,3	45,5	35,8
48001023	and they were only hearing, "The one formerly persecuting us is now proclaiming the faith that formerly he was attempting to destroy,"	0	0	93,8	57	36,8
45009024	us whom he also called, not only from the Jews but also from the Gentiles?	0	66	87,5	50,4	37,1
53002007	For the mystery of lawlessness is at work already; only the one who now restrains will do so until he is out of the way,	0	0	59,4	21,5	37,9
47008010	And I am giving an opinion in this matter, because this is profitable for you who not only began previously, a year	0	69	75	36,4	38,6

	ago, to do something, but also to want to do it.					
44021013	Then Paul replied, "What are you doing weeping and breaking my heart? For I am ready not only to be tied up, but even to die in Jerusalem for the name of the Lord Jesus!"	0	75	87,5	47,9	39,6
50002012	Therefore my dear friends, just as you have always obeyed, not as in my presence only but now much more in my absence, work out your own salvation with fear and trembling.	0	47	75	33,9	41,1
43003016	For in this way God loved the world, so that he gave his one and only Son, in order that everyone who believes in him will not perish, but will have eternal life.	0	0	78,1	36,4	41,7
46007039	A wife is bound for as long a time as her husband lives. But if her husband dies, she is free to marry whomever she wishes, only in the Lord.	0	0	81,3	38,8	42,5
48005013	For you were called to freedom, brothers. Only do not let your freedom become an opportunity for the flesh, but through love serve one another.	0	0	68,8	25,6	43,2
43017003	Now this is eternal life: that they know you, the only true God, and Jesus Christ, whom you have sent.	0	0	93,8	50,4	43,4
50001029	because to you has been graciously granted on behalf of Christ not only to believe in him, but also to suffer on behalf of him,	0	97	96,9	52,9	44
48006012	As many as are wanting to make a good showing in the flesh, these are attempting to compel you to be circumcised, only so that they will not be persecuted for the cross of Christ.	0	0	87,5	42,1	45,4
54006015	which he will make known in his own time, the blessed and only Sovereign, the King of those who reign as kings and Lord of those who rule as lords,	0	0	96,9	49,6	47,3
43003018	The one who believes in him is not judged, but the one who does not believe has already been judged,	0	0	78,1	30,6	47,5

	because he has not believed in the name of the one and only Son of God.					
65001004	For certain men have slipped in stealthily, who were designated long ago for this condemnation, ungodly ones, who change the grace of our God into licentiousness and who deny our only Master and Lord Jesus Christ.	0	0	87,5	39,7	47,8
65001025	to the only God our Savior, through Jesus Christ our Lord, be glory, majesty, power, and authority before all time and now and for all eternity. Amen.	0	0	87,5	38,8	48,7
45001032	who, although they know the requirements of God, that those who do such things are worthy of death, not only do they do the same things, but also they approve of those who do them.	0	91	90,6	41,3	49,3
42009038	And behold, a man from the crowd cried out, saying, "Teacher, I beg you to look with concern on my son, because he is my only son!"	0	0	90,6	39,7	50,9
42008042	because he had an only daughter, about twelve years old, and she was dying. Now as he was going, the crowds were pressing against him.	0	0	90,6	36,4	54,2
42007012	And as he approached the gate of the town, behold, a man who had died being carried out, his mother's only son, and she was a widow. And a large crowd from the town was with her.	0	0	93,8	38	55,8
62004009	By this the love of God is revealed in us: that God sent his one and only Son into the world in order that we may live through him.	0	0	84,4	28,1	56,3
49001021	above all rule and authority and power and lordship and every name named, not only in this age but also in the coming one,	0	81	84,4	26,4	58

Appendix D: How to calculate a dissimilarity distance matrix with Hamming Distance

Cross-linguistically recurrent identity of form reflects similarity in meaning. Similarity is gradable. The more often any pair of meanings are expressed by the same form in different languages, the more similar are their meanings. To the extent we have translations of texts across many different languages (massively parallel texts), we can investigate the similarity of meanings on the level of exemplars. Actually, languages are too abstract units to be used in practice. All we have is specific varieties of languages, in which particular texts are written, for which the use of the term *doculect* has become common practice. We can then compile a table with the doculects in the parallel corpus as columns and with the cross-linguistically aligned parallel passages as rows and with the markers to be compared (here contrast connectives) in the cells. Table B.1 lists 12 of 101 passages in 10 of 63 doculects (see 4.1.1).

Table D.1: Aligned restrictives across different doculects, excerpt from the database

	bel	bul	dan	deu	ell	eng	est	fin	fra	grc
1	adzIny	edinstven	enestAende	allein	monos	only	ainus	yksin	seul	monos
2	tolkl	samo	alene	allein	mono	only	ainult	NA	seulement	monon
3	tolkl	samo	kun	nur	mono	only	Uksnes	vain	seulement	monon
4	tolkl	samo	alene	allein	mono	only	Uksnes	ainoastaa	seulement	monon
5	tolkl	samo	kun	allein	mono	only	Uksnes	ainoastaa	seulement	monon
6	tolkl	samo	kun	allein	mono	only	Uksnes	vain	seulement	monon
7	tolkl	samo	NA	allein	mono	only	ZERO	ainoastaa	seulement	monon
8	tolkl	samo	NA	allein	mono	only	ainult	vain	seulement	monon
9	tolkl	samo	ZERO	allein	mono	only	Uksnes	vain	seulement	monon
10	adzIn	samo	kun	allein	mono	only	ainult	ainoa	ne=que	monos
11	tolkl	samo	kun	allein	mono	only	Uksnes	pelkAstAA	seulement	monon
12	adzIny	edini	eneste	allein	mono	only	ainus	ainoa	seul	monon

In Table D.1, it is visible that 4 and 5 are rather similar, since most doculects express it by the same form and the pair 1 and 2 is less similar. A very simple measure for similarity is Hamming distance, which is $1-s/t$, where s is the number of same markers across the pairs (boldface in Table 2) and t the total number of pairs. Thus, in Table B.2, the dissimilarity of the pair <4;5> is $1-9/10=0.1$ and the dissimilarity of the pair <1;2> is $1-2/9=0.78$; here division is by 9 because in one of the two verses one doculect has an instance of Non-Attested (NA).

All these pairwise values are arranged in a dissimilarity distance matrix, such as Table B.2. As can be seen, the values in the colored fields are now slightly different, because they now are calculated on the basis of 28 rather than 10 doculects.

Table D.2: Excerpt of a dissimilarity matrix calculated with Hamming Distance

0	1	2	3	4	5	6	7	8	9	10	...
1	0	0.92	0.92	0.92	0.92	0.88	0.92	0.92	0.92	0.77	...
2	0.92	0	0.35	0.27	0.27	0.3	0.38	0.33	0.35	0.42	...
3	0.92	0.35	0	0.39	0.25	0.21	0.27	0.23	0.29	0.5	...
4	0.92	0.27	0.39	0	0.25	0.33	0.35	0.35	0.36	0.57	...
5	0.92	0.27	0.25	0.25	0	0.21	0.19	0.19	0.29	0.46	...
6	0.88	0.3	0.21	0.33	0.21	0	0.23	0.18	0.33	0.5	...
7	0.92	0.38	0.27	0.35	0.19	0.23	0	0.2	0.31	0.54	...
8	0.92	0.33	0.23	0.35	0.19	0.18	0.2	0	0.31	0.5	...
9	0.92	0.35	0.29	0.36	0.29	0.33	0.31	0.31	0	0.46	...
10	0.77	0.42	0.5	0.57	0.46	0.5	0.54	0.5	0.46	0	...
...

The distance matrix of the kind illustrated in Table D.2 is then taken as an input for a Principal Coordinates Analysis (PCoA) that visualizes the distance matrix (R: `cmdscale()`). The first two dimensions of PCoA, which are those with most information, visualize the distances in form of a map where every cross-linguistically aligned passage is a dot. In this map, which has been called a probabilistic semantic map (Wälchli & Cysouw 2012), the distance between any pairs of dots reflects the semantic dissimilarity of any pair of cross-linguistically aligned passages in the dataset.

Appendix E: Principal Coordinates Analysis (2 probabilistic semantic maps)

Table E.1: Translations considered (28 European languages):

eng-x-bible-lexham	English
bel-x-bible-bokun	Belarusian
bul-x-bible-1940	Bulgarian
dan-x-bible-hverdagsdansk	Danish
deu-x-bible-luther1912	German
ell-x-bible-newworld	Modern Greek
est-x-bible-1997	Estonian
fin-x-bible-1992	Finnish
fra-x-bible-darby	French
grc-x-bible-byzantine	Koine Greek
hun-x-bible-2012	Hungarian
isl-x-bible	Icelandic
ita-x-bible-diodati	Italian
lat-x-bible-vulgataclementina	Latin
lav-x-bible-1997	Latvian
lit-x-bible-tikejimosodis	Lithuanian
mhr-x-bible	Eastern Mari
myv-x-bible	Erzya Mordvin
pol-x-bible-living	Polish
rus-x-bible-modern2011	Russian
slv-x-bible	Slovene
spa-x-bible-nuevaviviente	Spanish
srp-x-bible	Serbian
swe-x-bible-newworld	Swedish
swg-x-bible	Alemannic German
tat-x-bible	Tatar
tur-x-bible-2009	Turkish
ukr-x-bible-2009	Ukrainian

Table E.2: 101 verses included in the multidimensional scaling with English grid with Principal Coordinates Analysis values for the first two dimensions given

Verse	Code	Text	ENG Dim 1	ENG Dim 2
43017020	only	"And I do not ask on behalf of these only, but also on behalf of those who believe in me through their word,	-0,214493925	0,020623676
45004012	only	and the father of those who are circumcised to those who are not only from the circumcision, but who also follow in the footsteps of the faith of our father Abraham which he had while uncircumcised,	-0,214132489	0,019573482
45013005	only	Therefore it is necessary to be in subjection, not only because of wrath but also because of conscience,	-0,212982558	-0,000428249
49001021	only	above all rule and authority and power and lordship and every name named, not only in this age but also in the coming one,	-0,21271455	-0,024205345
55004008	only	Finally, the crown of righteousness is reserved for me, that the Lord, the righteous Judge, will award to me on that day, and not only to me, but also to all who have loved his appearing,	-0,211586243	0,013234124
52002008	only	Longing for you in this way, we determined to share with you not only the gospel of God but also our own souls, because you had become dear to us,	-0,211167454	-0,001951897
44019026	only	and you see and hear that not only in Ephesus but in almost all of Asia this man Paul has persuaded and turned away a large crowd by saying that the gods made by hands are not gods,	-0,210810334	-0,034512349
43005018	only	So on account of this the Jews were seeking even more to kill him, because he not only was breaking the Sabbath, but also was calling God his own Father, thus making himself equal with God,	-0,208385805	-0,041172674
48001023	only	and they were only hearing, "The one formerly persecuting us is now	-0,208204361	0,053270754

Verse	Code	Text	ENG Dim 1	ENG Dim 2
		proclaiming the faith that formerly he was attempting to destroy,"		
52001008	only	for from you the word of the Lord has sounded forth, not only in Macedonia and in Achaia, but in every place your faith toward God has gone out, so that we have no need to say anything,	-0,208177712	-0,027406978
42008050	only	But Jesus, when he heard this, replied to him, "Do not be afraid! Only believe, and she will be healed,"	-0,208117391	0,129797345
43013009	only	Simon Peter said to him, "Lord, not my feet only, but also my hands and my head!"	-0,207975725	-0,002091852
60002018	only	Domestic slaves, be subject to your masters with all respect, not only to those who are good and gentle, but also to those who are unjust,	-0,207759661	0,000749935
45008023	only	Not only this, but we ourselves also, having the first fruits of the Spirit, even we ourselves groan within ourselves while we await eagerly our adoption, the redemption of our body,	-0,207371489	-0,03985959
48006012	only	As many as are wanting to make a good showing in the flesh, these are attempting to compel you to be circumcised, only so that they will not be persecuted for the cross of Christ,	-0,206988081	0,095983863
62002002	only	and he is the propitiation for our sins, and not for ours only, but also for the sins of the whole world,	-0,206581491	0,0233766
50002027	only	For indeed he was sick, coming near to death, but God had mercy on him and not on him only, but also on me, so that I would not have grief upon grief,	-0,206472608	-0,042897319
44021013	only	Then Paul replied, "What are you doing weeping and breaking my heart? For I am ready not only to be tied up, but even to die in Jerusalem for the name of the Lord Jesus!"	-0,206238537	-0,034902041
44019027	only	So not only is there a danger this line of business of ours will come into disrepute, but also the temple of the great goddess Artemis will be regarded	-0,205267342	0,005023505

Verse	Code	Text	ENG Dim 1	ENG Dim 2
		as nothing — and she is about to be brought down even from her grandeur, she whom the whole of Asia and the entire world worship!"		
54005013	only	And at the same time also, going around from house to house, they learn to be idle, and not only idle, but also gossipy and busybodies, saying the things that are not necessary,	-0,203826863	0,031627717
40021021	only	And Jesus answered and said to them, "Truly I say to you, if you have faith and do not doubt, you will do not only what was done to the fig tree, but even if you say to this mountain, ' Be lifted up and thrown into the sea," it will happen!	-0,203636477	-0,037156051
58009010	only	concerning instead only food and drink and different washings, regulations of outward things imposed until the time of setting things right,	-0,203272958	0,047596416
48004018	only	But it is good to be sought zealously in good at all times, and not only when I am present with you,	-0,202550571	0,05304653
45009024	only	us whom he also called, not only from the Jews but also from the Gentiles?	-0,202087049	-0,032412488
44026029	only	And Paul replied, "I pray to God, whether in a short time or in a long time, not only you but also all those who are listening to me today may become such people as I also am, except for these bonds!"	-0,200954999	-0,052189658
45003029	only	Or is God the God of the Jews only? Is he not also the God of the Gentiles? Yes, also of the Gentiles,	-0,200611196	-0,010207378
46015019	only	If we have put our hope in Christ in this life only, we are of all people most pitiable,	-0,199254197	0,023557601
47009012	only	because the service of this ministry is not only supplying the needs of the saints, but also is overflowing through many expressions of thanksgiving to God,	-0,198647316	-0,001932509
55002020	only	Now in a great house there are not only gold and silver vessels, but also	-0,196625203	0,033349556

Verse	Code	Text	ENG Dim 1	ENG Dim 2
		wooden and earthenware ones, some of which are for honorable use, and some of which are for ordinary use,		
47008010	only	And I am giving an opinion in this matter, because this is profitable for you who not only began previously, a year ago, to do something, but also to want to do it,	-0,196015003	-0,004789657
45001032	only	who, although they know the requirements of God, that those who do such things are worthy of death, not only do they do the same things, but also they approve of those who do them,	-0,194805314	-0,094347812
47008021	only	For we are taking into consideration what is honorable not only before the Lord, but also before people,	-0,194416302	-0,005303203
59001022	only	But be doers of the message and not only hearers, deceiving yourselves,	-0,193317341	0,010546413
50002012	only	Therefore my dear friends, just as you have always obeyed, not as in my presence only but now much more in my absence, work out your own salvation with fear and trembling,	-0,19241189	-0,067622986
44027010	only	saying to them, "Men, I perceive that the voyage is going to end with disaster and great loss, not only of the cargo and the ship, but also of our lives!"	-0,1914687	-0,047044371
50001029	only	because to you has been graciously granted on behalf of Christ not only to believe in him, but also to suffer on behalf of him,	-0,191155074	-0,061520466
45004016	only	Because of this, it is by faith, in order that it may be according to grace, so that the promise may be secure to all the descendants, not only to those of the law, but also to those of the faith of Abraham, who is the father of us all	-0,191071271	-0,013803469
58012026	only	whose voice shook the earth at that time, but now he has promised, saying, "Yet once more I will shake not only the earth but also heaven,"	-0,185508172	0,023439971

Verse	Code	Text	ENG Dim 1	ENG Dim 2
62005006	only	This is the one who came by water and blood — Jesus Christ, not with the water only, but with the water and with the blood, And the Spirit is the one who testifies, because the Spirit is the truth,	-0,183469914	-0,01822517
43012009	only	Now the large crowd of Jews found out that he was there, and they came, not only because of Jesus, but so that they could see Lazarus also, whom he raised from the dead,	-0,183397927	-0,017882455
46007039	only	A wife is bound for as long a time as her husband lives, But if her husband dies, she is free to marry whomever she wishes, only in the Lord,	-0,181683222	0,168717429
40005047	only	And if you greet only your brothers, what are you doing that is remarkable? Do not the Gentiles also do the same?	-0,178843965	0,09345067
52001005	only	because our gospel did not come to you with word only, but also with power and with the Holy Spirit and with much certainty, just as you know what sort of people we became among you for your sake,	-0,176756281	-0,020061365
43011052	only	and not for the nation only, but also that the children of God who are scattered would be gathered into one,)	-0,17547357	-0,035147201
45005003	only	And not only this, but we also boast in our afflictions, because we know that affliction produces patient endurance,	-0,171590533	-0,070183843
45005011	only	And not only this, but also we are boasting in God through our Lord Jesus Christ, through whom we have now received the reconciliation,	-0,165544084	-0,10513913
41005036	only	But Jesus, ignoring what was said, told the ruler of the synagogue, "Do not be afraid — only believe!"	-0,165148152	0,100572537
66021027	NEG=except	And every unclean person and the one who practices detestable things and falsehood will never enter into it, except those who are written in the book of life of the Lamb,	-0,165076298	0,080663758
47007007	only	and not only by his coming, but also by the comfort with which he was	-0,163295426	0,007873303

Verse	Code	Text	ENG Dim 1	ENG Dim 2
		comforted among you, because he reported to us your longing, your mourning, your zeal for me, so that I rejoiced even more,		
44018025	only	This man had been instructed in the way of the Lord, and being enthusiastic in spirit, he was speaking and teaching accurately the things about Jesus, although he knew only the baptism of John,	-0,151451005	0,064352559
66009004	NEG=except	And it was told to them that they should not damage the grass of the earth or any green plant or any tree, except those people who do not have the seal of God on their foreheads,	-0,146354968	0,034972186
40009021	only	for she said to herself, "If only I touch his cloak I will be healed,"	-0,138151046	0,166434782
50001027	only	Only lead your lives in a manner worthy of the gospel of Christ, so that whether I come and see you or am absent I hear your circumstances, that you are standing firm in one spirit, with one soul contending side by side for the faith of the gospel,	-0,136183675	0,112194425
53002007	only	For the mystery of lawlessness is at work already ; only the one who now restrains will do so until he is out of the way,	-0,11670928	0,123987275
45014002	only	One believes he may eat all things, but the one who is weak eats only vegetables,	-0,111181458	0,193720673
44027022	only	And now I urge you to cheer up, for there will be no loss of life from among you, but only of the ship,	-0,108975903	0,107947409
45004009	ZERO	Therefore, is this blessing [ONLY] for those who are circumcised, or also for those who are uncircumcised? For we say, "Faith was credited to Abraham for righteousness,"	-0,106720436	0,250609831
48005013	only	For you were called to freedom, brothers, Only do not let your freedom become an opportunity for the flesh, but through love serve one another,	-0,101097519	0,02671923

Verse	Code	Text	ENG Dim 1	ENG Dim 2
44008016	only	(For he had not yet fallen on any of them, but they had only been baptized in the name of the Lord Jesus,)	-0,099234585	0,00838927
47008019	only	And not only this, but he was also chosen by the churches as our traveling companion together with this gift that is being administered by us to the glory of the Lord himself and to show our readiness to help,	-0,09731654	-0,132177599
45009010	only	And not only this, but also when Rebecca conceived children by one man, Isaac our father —	-0,086686421	-0,105249657
48002010	only	They asked only that we should remember the poor, the very thing I was also eager to do,	-0,072044465	0,034587374
63001001	alone	The elder, to the elect lady and her children, whom I love in truth — and not I alone, but also all those who know the truth —	-0,059919832	-0,143810559
40012004	only	how he entered into the house of God and ate the bread of the presentation, which it was not permitted for him or for those with him to eat, but only for the priests?	-0,055214813	-0,152418099
40024036	NEG=except=alone	"But concerning that day and hour no one knows — not even the angels of heaven nor the Son — except the Father alone,	-0,049938534	-0,042400449
54005023	only	(No longer drink only water, but use a little wine for your stomach and your frequent illnesses,)	-0,049295048	0,110476851
46009024	ZERO	Do you not know that those who run in the stadium all run, but [ONLY] one receives the prize? Run in such a way that you may win,	-0,044553858	0,149932527
45016004	only	who risked their own necks for my life, for which not only I am thankful, but also all the churches of the Gentiles ;	-0,033979334	-0,289481035
47013008	NEG=but=rather=only	For we are not able to do anything against the truth, but rather only for the truth,	-0,0120203	0,220369304

Verse	Code	Text	ENG Dim 1	ENG Dim 2
42004008	only	And Jesus answered and said to him, "It is written, ' You shall worship the Lord your God, and serve only him,'"	-0,00188731	-0,271325113
40019011	NEG=but	But he said to them, "Not everyone can accept this saying but those to whom it has been given,	0,003133406	0,200662495
46009006	only	Or do only I and Barnabas not have the right to refrain from working?	0,007898298	-0,155253542
46014036	only	Or has the word of God gone out from you, or has it come to you only?	0,00861558	-0,193786033
58009007	only	but only the high priest enters into the second tent once a year, not without blood, which he offers on behalf of himself and the sins of the people committed in ignorance,	0,02437081	-0,207084399
44002015	ZERO	For these men are not drunk, as you assume, because it is the third hour of the day [ONLY],	0,029917306	0,297360659
40004010	only	Then Jesus said to him, "Go away, Satan, for it is written, ' You shall worship the Lord your God and serve only him,'"	0,031990634	-0,284851745
43013010	only	Jesus said to him, "The one who has bathed only needs to wash his feet, but is completely clean, And you are clean, but not all of you,"	0,032398149	0,171143204
41013032	NEG=except	"But concerning that day or hour no one knows — not even the angels in heaven nor the Son — except the Father,	0,033198256	0,162930221
55004011	alone	Luke alone is with me, Take along Mark and bring him with you, because he is useful to me for ministry,	0,047519279	-0,218296809
43005019	NEG=except	So Jesus answered and said to them, "Truly, truly I say to you, the Son can do nothing from himself except what he sees the Father doing, For whatever that one does, these things also the Son does likewise,	0,066178152	0,292119392
44011019	NEG=except=alone	Now those who had been scattered because of the persecution that took place over Stephen traveled as far as Phoenicia and Cyprus and Antioch,	0,107132904	0,131078891

Verse	Code	Text	ENG Dim 1	ENG Dim 2
		proclaiming the message to no one except Jews alone,		
43006022	NEG=except	On the next day, the crowd that was on the other side of the sea saw that other boats were not there (except one), and that Jesus had not entered with his disciples into the boat, but his disciples had departed alone,	0,160529804	0,100833287
50004015	NEG=except=alone	Now you also know, Philippians, that at the beginning of the gospel, when I departed from Macedonia, no church shared with me in the matter of giving and receiving except you alone,	0,252833904	-0,036412073
51004011	only	and Jesus who is called Justus, These are the only ones who are fellow workers for the kingdom of God from the circumcision, who have been a comfort to me,	0,263313997	-0,337197238
42024018	only	And one of them, named Cleopas, answered and said to him, "Are you the only one living near Jerusalem and not knowing the things that have happened in it in these days?"	0,337447391	-0,239833943
45016027	only	to the only wise God, through Jesus Christ, to whom be the glory for eternity, Amen,	0,469079627	-0,361846678
65001025	only	to the only God our Savior, through Jesus Christ our Lord, be glory, majesty, power, and authority before all time and now and for all eternity, Amen,	0,497905757	-0,254018783
54001017	only	Now to the King of the ages, immortal, invisible, to the only God, be honor and glory forever and ever, Amen,	0,502811212	-0,361070829
43005044	only	How are you able to believe, if you accept glory from one another, and do not seek the glory which is from the only God?	0,505331495	-0,326206712
43017003	only	Now this is eternal life: that they know you, the only true God, and Jesus Christ, whom you have sent,	0,513773699	-0,310102051
65001004	only	For certain men have slipped in stealthily, who were designated long ago for this condemnation, ungodly	0,551824558	-0,251559747

Verse	Code	Text	ENG Dim 1	ENG Dim 2
		ones, who change the grace of our God into licentiousness and who deny our only Master and Lord Jesus Christ,		
54006015	only	which he will make known in his own time, the blessed and only Sovereign, the King of those who reign as kings and Lord of those who rule as lords,	0,600579665	-0,335533864
42007012	only	And as he approached the gate of the town, behold, a man who had died was being carried out, his mother's only son, and she was a widow, And a large crowd from the town was with her,	0,688504554	0,076013254
42009038	only	And behold, a man from the crowd cried out, saying, "Teacher, I beg you to look with concern on my son, because he is my only son!	0,688669076	0,093851852
42008042	only	because he had an only daughter, about twelve years old, and she was dying, Now as he was going, the crowds were pressing against him,	0,694410568	0,102536307
43003018	one=and=only	The one who believes in him is not judged, but the one who does not believe has already been judged, because he has not believed in the name of the one and only Son of God,	0,706736297	0,265276005
43001018	one=and=only	No one has seen God at any time ; the one and only, God, the one who is in the bosom of the Father — that one has made him known,	0,70727972	0,269720405
43001014	one=and=only	And the Word became flesh and took up residence among us, and we saw his glory, glory as of the one and only from the Father, full of grace and truth,	0,707908036	0,27063503
43003016	one=and=only	For in this way God loved the world, so that he gave his one and only Son, in order that everyone who believes in him will not perish, but will have eternal life,	0,717228989	0,302099576
62004009	one=and=only	By this the love of God is revealed in us: that God sent his one and only Son into the world in order that we may live through him,	0,72102708	0,303484977
58011017	one=and=only	By faith Abraham, when he was tested, offered Isaac, and the one who	0,726711151	0,273800024

Verse	Code	Text	ENG Dim 1	ENG Dim 2
		received the promises was ready to offer his one and only son,		

217 verses included in the multidimensional scaling with English & world-wide grid with Principal Coordinates Analysis values for the first two dimensions given

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
50002012	only	Therefore my dear friends, just as you have always obeyed, not as in my presence only but now much more in my absence, work out your own salvation with fear and trembling,	-0,44029641	-0,180611513
45009010	only	And not only this, but also when Rebecca conceived children by one man, Isaac our father —	-0,432342244	-0,11839078
44026029	only	And Paul replied, "I pray to God, whether in a short time or in a long time, not only you but also all those who are listening to me today may become such people as I also am, except for these bonds!"	-0,430668705	-0,147892604
45001032	only	who, although they know the requirements of God, that those who do such things are worthy of death, not only do they do the same things, but also they approve of those who do them,	-0,414808741	-0,160317322
45005011	only	And not only this, but also we are boasting in God through our Lord Jesus Christ, through whom we have now received the reconciliation,	-0,413986677	-0,175912153
40021021	only	And Jesus answered and said to them, "Truly I say to you, if you have faith and do not doubt, you will do not only what was done to the fig tree, but even if you say to this mountain, 'Be lifted up and thrown into the sea,' it will happen!"	-0,3974524	-0,151258646
54005013	only	And at the same time also, going around from house to house, they learn to be idle, and not only idle, but also gossipy and busybodies, saying the things that are not necessary,	-0,397267992	-0,142057527
45005003	only	And not only this, but we also boast in our afflictions, because we know that affliction produces patient endurance,	-0,394542425	-0,157589328

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
44019026	only	and you see and hear that not only in Ephesus but in almost all of Asia this man Paul has persuaded and turned away a large crowd by saying that the gods made by hands are not gods,	-0,391611155	-0,14949858
43005018	only	So on account of this the Jews were seeking even more to kill him, because he not only was breaking the Sabbath, but also was calling God his own Father, thus making himself equal with God,	-0,3877137	-0,160891281
49001021	only	above all rule and authority and power and lordship and every name named, not only in this age but also in the coming one,	-0,386646306	-0,164637633
44019027	only	So not only is there a danger this line of business of ours will come into disrepute, but also the temple of the great goddess Artemis will be regarded as nothing — and she is about to be brought down even from her grandeur, she whom the whole of Asia and the entire world worship!"	-0,386559366	-0,167091587
43012009	only	Now the large crowd of Jews found out that he was there, and they came, not only because of Jesus, but so that they could see Lazarus also, whom he raised from the dead,	-0,384292731	-0,139613098
47008019	only	And not only this, but he was also chosen by the churches as our traveling companion together with this gift that is being administered by us to the glory of the Lord himself and to show our readiness to help,	-0,383874545	-0,124040465
52001008	only	for from you the word of the Lord has sounded forth, not only in Macedonia and in Achaia, but in every place your faith toward God has gone out, so that we have no need to say anything,	-0,383190783	-0,145824587
44027010	only	saying to them, "Men, I perceive that the voyage is going to end with disaster and great loss, not only of the cargo and the ship, but also of our lives!"	-0,382645489	-0,169068351
45009024	only	us whom he also called, not only from the Jews but also from the Gentiles?	-0,381814677	-0,162002948

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
45008023	only	Not only this, but we ourselves also, having the first fruits of the Spirit, even we ourselves groan within ourselves while we await eagerly our adoption, the redemption of our body,	-0,377890858	-0,170421235
50002027	only	For indeed he was sick, coming near to death, but God had mercy on him and not on him only, but also on me, so that I would not have grief upon grief,	-0,375044796	-0,170515811
50001029	only	because to you has been graciously granted on behalf of Christ not only to believe in him, but also to suffer on behalf of him,	-0,373988036	-0,148433303
44021013	only	Then Paul replied, "What are you doing weeping and breaking my heart? For I am ready not only to be tied up, but even to die in Jerusalem for the name of the Lord Jesus!"	-0,373279839	-0,171319663
47009012	only	because the service of this ministry is not only supplying the needs of the saints, but also is overflowing through many expressions of thanksgiving to God,	-0,372326198	-0,172970222
48001023	only	and they were only hearing, "The one formerly persecuting us is now proclaiming the faith that formerly he was attempting to destroy,"	-0,362608111	-0,167911138
47007007	only	and not only by his coming, but also by the comfort with which he was comforted among you, because he reported to us your longing, your mourning, your zeal for me, so that I rejoiced even more,	-0,362242743	-0,125340626
58012026	only	whose voice shook the earth at that time, but now he has promised, saying, "Yet once more I will shake not only the earth but also heaven,"	-0,362080736	-0,172141192
45004012	only	and the father of those who are circumcised to those who are not only from the circumcision, but who also follow in the footsteps of the faith of our father Abraham which he had while uncircumcised,	-0,360396027	-0,178499639
60002018	only	Domestic slaves, be subject to your masters with all respect, not only to those	-0,357773125	-0,148481272

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
		who are good and gentle, but also to those who are unjust,		
52002008	only	Longing for you in this way, we determined to share with you not only the gospel of God but also our own souls, because you had become dear to us,	-0,357598136	-0,150994075
43013009	only	Simon Peter said to him, "Lord, not my feet only, but also my hands and my head!"	-0,356805505	-0,166648458
55004008	only	Finally, the crown of righteousness is reserved for me, that the Lord, the righteous Judge, will award to me on that day, and not only to me, but also to all who have loved his appearing,	-0,355692393	-0,163724563
47008021	only	For we are taking into consideration what is honorable not only before the Lord, but also before people,	-0,354862888	-0,141896314
62005006	only	This is the one who came by water and blood — Jesus Christ, not with the water only, but with the water and with the blood, And the Spirit is the one who testifies, because the Spirit is the truth,	-0,353757068	-0,138243348
45004016	only	Because of this, it is by faith, in order that it may be according to grace, so that the promise may be secure to all the descendants, not only to those of the law, but also to those of the faith of Abraham, who is the father of us all	-0,352881846	-0,149822816
45003029	only	Or is God the God of the Jews only? Is he not also the God of the Gentiles? Yes, also of the Gentiles,	-0,352735135	-0,158790499
47008010	only	And I am giving an opinion in this matter, because this is profitable for you who not only began previously, a year ago, to do something, but also to want to do it,	-0,350233819	-0,199909009
43017020	only	"And I do not ask on behalf of these only, but also on behalf of those who believe in me through their word,	-0,349835273	-0,159972995
45013005	only	Therefore it is necessary to be in subjection, not only because of wrath but also because of conscience,	-0,348020203	-0,16189974
43011052	only	and not for the nation only, but also that the children of God who are scattered would be gathered into one,)	-0,346530401	-0,159476468

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
52001005	only	because our gospel did not come to you with word only, but also with power and with the Holy Spirit and with much certainty, just as you know what sort of people we became among you for your sake,	-0,344819062	-0,1533147
62002002	only	and he is the propitiation for our sins, and not for ours only, but also for the sins of the whole world,	-0,342012508	-0,158610128
48004018	only	But it is good to be sought zealously in good at all times, and not only when I am present with you,	-0,338966319	-0,186962753
48006012	only	As many as are wanting to make a good showing in the flesh, these are attempting to compel you to be circumcised, only so that they will not be persecuted for the cross of Christ,	-0,338587344	-0,156593655
59001022	only	But be doers of the message and not only hearers, deceiving yourselves,	-0,33817286	-0,163386049
45016004	only	who risked their own necks for my life, for which not only I am thankful, but also all the churches of the Gentiles;	-0,336961254	-0,097393556
44018025	only	This man had been instructed in the way of the Lord, and being enthusiastic in spirit, he was speaking and teaching accurately the things about Jesus, although he knew only the baptism of John,	-0,317570143	-0,137450289
58009010	only	concerning instead only food and drink and different washings, regulations of outward things imposed until the time of setting things right,	-0,316912269	-0,165394492
44008016	only	(For he had not yet fallen on any of them, but they had only been baptized in the name of the Lord Jesus,)	-0,312739707	-0,118554667
48002010	only	They asked only that we should remember the poor, the very thing I was also eager to do,	-0,310406204	-0,112390947
59002024	alone	You see that a person is justified by works and not by faith alone,	-0,305303553	-0,14588519
40005047	only	And if you greet only your brothers, what are you doing that is remarkable? Do not the Gentiles also do the same?	-0,304234674	-0,142012214

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
46015019	only	If we have put our hope in Christ in this life only, we are of all people most pitiable,	-0,303224012	-0,195316422
55002020	only	Now in a great house there are not only gold and silver vessels, but also wooden and earthenware ones, some of which are for honorable use, and some of which are for ordinary use,	-0,301826182	-0,190606814
46014036	only	Or has the word of God gone out from you, or has it come to you only?	-0,300144963	-0,081870406
48005013	only	For you were called to freedom, brothers, Only do not let your freedom become an opportunity for the flesh, but through love serve one another,	-0,298917806	-0,106521269
40009021	only	for she said to herself, "If only I touch his cloak I will be healed,"	-0,297607171	-0,117764725
42008050	only	But Jesus, when he heard this, replied to him, "Do not be afraid! Only believe, and she will be healed,"	-0,29308803	-0,178718727
66009004	NEG=except	And it was told to them that they should not damage the grass of the earth or any green plant or any tree, except those people who do not have the seal of God on their foreheads,	-0,291565425	-0,07258754
41005036	only	But Jesus, ignoring what was said, told the ruler of the synagogue, "Do not be afraid — only believe!"	-0,29035487	-0,147656459
46009006	only	Or do only I and Barnabas not have the right to refrain from working?	-0,285384526	-0,079698181
66021027	NEG=except	And every unclean person and the one who practices detestable things and falsehood will never enter into it, except those who are written in the book of life of the Lamb,	-0,285331296	-0,057299237
46007039	only	A wife is bound for as long a time as her husband lives, But if her husband dies, she is free to marry whomever she wishes, only in the Lord,	-0,284867651	-0,156167394
63001001	alone	The elder, to the elect lady and her children, whom I love in truth — and not I alone, but also all those who know the truth —	-0,283108517	-0,102091526

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
42004008	only	And Jesus answered and said to him, "It is written, 'You shall worship the Lord your God, and serve only him,'"	-0,269229861	-0,069997194
40012004	only	how he entered into the house of God and ate the bread of the presentation, which it was not permitted for him or for those with him to eat, but only for the priests?	-0,261260743	-0,107230807
40008008	only	And the centurion answered and said, "Lord, I am not worthy that you should come in under my roof, But only say the word and my slave will be healed,	-0,258234217	-0,156023909
45004023	alone	But it was not written for the sake of him alone that it was credited to him,	-0,257856014	-0,152108528
40004010	only	Then Jesus said to him, "Go away, Satan, for it is written, 'You shall worship the Lord your God and serve only him,'"	-0,252743238	-0,050490986
40004004	alone	But he answered and said, "It is written, 'Man will not live on bread alone, but on every word that comes out of the mouth of God,'"	-0,252016044	-0,100423793
42004004	alone	And Jesus replied to him, "It is written, 'Man will not live on bread alone,'"	-0,251921063	-0,100987659
55004011	alone	Luke alone is with me, Take along Mark and bring him with you, because he is useful to me for ministry,	-0,245582256	-0,079456504
53002007	only	For the mystery of lawlessness is at work already; only the one who now restrains will do so until he is out of the way,	-0,244602785	-0,150687165
50001027	only	Only lead your lives in a manner worthy of the gospel of Christ, so that whether I come and see you or am absent I hear your circumstances, that you are standing firm in one spirit, with one soul contending side by side for the faith of the gospel,	-0,235336897	-0,18436284
58009007	only	but only the high priest enters into the second tent once a year, not without blood, which he offers on behalf of himself and the sins of the people committed in ignorance,	-0,230795055	-0,079517298
44027022	only	And now I urge you to cheer up, for there will be no loss of life from among you, but only of the ship,	-0,2235524	-0,107547755

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
40024036	NEG=except =alone	"But concerning that day and hour no one knows — not even the angels of heaven nor the Son — except the Father alone,	-0,188196778	-0,052462982
51004011	only	and Jesus who is called Justus, These are the only ones who are fellow workers for the kingdom of God from the circumcision, who have been a comfort to me,	-0,172076538	0,015848127
45011003	alone	"Lord, they have killed your prophets, they have torn down your altars, and I alone am left, and they are seeking my life!"	-0,154316912	0,036445345
42024018	only	And one of them, named Cleopas, answered and said to him, "Are you the only one living near Jerusalem and not knowing the things that have happened in it in these days?"	-0,152219054	0,038498823
47013008	NEG=but=ra ther=only	For we are not able to do anything against the truth, but rather only for the truth,	-0,141125444	-0,00656767
43008009	alone	Now when they heard it, they began to depart, one by one, beginning with the older ones, and he was left alone — and the woman who was in their midst,	-0,132783216	-0,032585314
66015004	only	Who would never fear, Lord, and glorify your name? For only you are holy, because all the nations will come and worship before you, because your righteous deeds have been revealed,"	-0,127096044	0,03519518
42024012	only	But Peter got up and ran to the tomb, and bending over to look, he saw only the strips of linen cloth, and he went away to his home wondering what had happened,	-0,126050903	0,03327488
45016027	only	to the only wise God, through Jesus Christ, to whom be the glory for eternity, Amen,	-0,103641115	0,116784189
40019011	NEG=but	But he said to them, "Not everyone can accept this saying but those to whom it has been given,	-0,102815969	-0,001735927
65001025	only	to the only God our Savior, through Jesus Christ our Lord, be glory, majesty, power, and authority before all time and now and for all eternity, Amen,	-0,099780424	0,119486116
43013010	only	Jesus said to him, "The one who has bathed only needs to wash his feet, but is completely clean, And you are clean, but not all of you,"	-0,094970189	0,205666923

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
54001017	only	Now to the King of the ages, immortal, invisible, to the only God, be honor and glory forever and ever, Amen,	-0,093313297	0,099999428
43006022	NEG=except	On the next day, the crowd that was on the other side of the sea saw that other boats were not there (except one), and that Jesus had not entered with his disciples into the boat, but his disciples had departed alone,	-0,092065982	0,221276103
43017003	only	Now this is eternal life: that they know you, the only true God, and Jesus Christ, whom you have sent,	-0,09162254	0,108806064
44011019	NEG=except =alone	Now those who had been scattered because of the persecution that took place over Stephen traveled as far as Phoenicia and Cyprus and Antioch, proclaiming the message to no one except Jews alone,	-0,089050929	0,185913029
41013032	NEG=except	"But concerning that day or hour no one knows — not even the angels in heaven nor the Son — except the Father,	-0,087560158	0,146940473
43005044	only	How are you able to believe, if you accept glory from one another, and do not seek the glory which is from the only God?	-0,070642049	0,101911316
40015024	NEG=except	But he answered and said, "I was not sent except to the lost sheep of the house of Israel,"	-0,066128677	0,240795522
40014017	NEG=except	And they said to him, "We do not have anything here except five loaves and two fish,"	-0,05117399	0,333371619
42004027	NEG=except	And there were many lepers in Israel in the time of the prophet Elisha, and none of them was made clean except Naaman the Syrian,"	-0,047152705	0,319007194
50004015	NEG=except =alone	Now you also know, Philippians, that at the beginning of the gospel, when I departed from Macedonia, no church shared with me in the matter of giving and receiving except you alone,	-0,040605755	0,196573326
41006005	NEG=except	And he was not able to do any miracle in that place except to lay his hands on a few sick people and heal them,	-0,038179067	0,281231464
41002026	NEG=except	how he entered into the house of God in the time of Abiathar the high priest and ate the	-0,03543149	0,38392722

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
		bread of the presentation, which it is not permitted to eat (except the priests) and also gave it to those who were with him?"		
65001004	only	For certain men have slipped in stealthily, who were designated long ago for this condemnation, ungodly ones, who change the grace of our God into licentiousness and who deny our only Master and Lord Jesus Christ,	-0,018411464	0,139639169
54006016	alone	the one who alone possesses immortality, who lives in unapproachable light, whom no human being has seen nor is able to see, to whom be honor and eternal power, Amen,	-0,017803297	0,138109985
43005019	NEG=except	So Jesus answered and said to them, "Truly, truly I say to you, the Son can do nothing from himself except what he sees the Father doing, For whatever that one does, these things also the Son does likewise,	-0,0171984	0,139073215
43006046	NEG=except	(Not that anyone has seen the Father except the one who is from God — this one has seen the Father,)	-0,009211067	0,340697334
42018019	NEG=except	And Jesus said to him, "Why do you call me good? No one is good except God alone,	0,000881469	0,450550675
48001019	NEG=except	but I did not see any others of the apostles except James, the brother of the Lord,	0,002082892	0,439955473
54006015	only	which he will make known in his own time, the blessed and only Sovereign, the King of those who reign as kings and Lord of those who rule as lords,	0,003341875	0,154399178
42006004	NEG=except =alone	how he entered into the house of God and took the bread of the presentation, which it is not permitted to eat (except the priests alone), and ate it and gave it to those with him?"	0,006966767	0,315372467
42009036	alone	And after the voice had occurred, Jesus was found alone, And they kept silent and told no one in those days anything of what they had seen,	0,008724085	0,111305462
43003013	NEG=except	And no one has ascended into heaven except the one who descended from heaven — the Son of Man,	0,011657461	0,463141815

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
42009013	NEG=more=than	But he said to them, "You give them something to eat!" And they said, " We have no more than five loaves and two fish, unless perhaps we go and purchase food for all these people,"	0,01849341	0,26797988
45009027	ZERO	And Isaiah cries out concerning Israel, "Even if the number of the sons of Israel is like the sand of the sea, [ONLY] the remnant will be saved,	0,026253334	-0,210240398
54005023	only	(No longer drink only water, but use a little wine for your stomach and your frequent illnesses,)	0,031763738	-0,236015515
47012013	except	For in what respect are you made worse off more than the rest of the churches, except that I myself was not a burden to you? Forgive me this wrong!	0,032780071	0,17197357
41008014	NEG=except	And they had forgotten to take bread, and except for one loaf, they did not have any with them in the boat,	0,035707234	0,24058591
41009029	NEG=except	And he said to them, "This kind can come out by nothing except by prayer,"	0,037299339	0,35991523
45015018	NEG=except	For I will not dare to speak about anything except that which Christ has accomplished through me, resulting in the obedience of the Gentiles by word and deed,	0,038532354	0,2825009
50002004	ZERO	each one of you not looking out [ONLY] for his own interests, but also each of you looking out for the interests of others,	0,039337232	-0,278833995
66002017	NEG=except	The one who has an ear, let him hear what the Spirit says to the churches, To the one who conquers, I will give to him some of the hidden manna, and I will give to him a white stone, and on the stone a new name written, that no one knows except the one who receives it,'	0,040154645	0,545450429
42010022	NEG=except	All things have been handed over to me by my Father, and no one knows who the Son is except the Father and who the Father is except the Son, and anyone to whom the Son wants to reveal him,"	0,044530741	0,524374147
41011013	NEG=except	And when he saw from a distance a fig tree that had leaves, he went to see if perhaps he would find anything on it, And when he	0,047221274	0,438172725

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
		came up to it he found nothing except leaves, because it was not the season for figs,		
42008042	only	because he had an only daughter, about twelve years old, and she was dying, Now as he was going, the crowds were pressing against him,	0,053208071	0,231351153
41004034	in=private	And he did not speak to them without a parable, but in private he explained everything to his own disciples,	0,055571359	0,140359277
41010018	NEG=except =alone	So Jesus said to him, "Why do you call me good? No one is good except God alone,	0,060122607	0,426947027
46008004	NEG=except	Therefore, concerning the eating of food sacrificed to idols, we know that "an idol is nothing in the world" and that "there is no God except one,"	0,060218377	0,371662133
45014002	only	One believes he may eat all things, but the one who is weak eats only vegetables,	0,062809758	-0,270027001
40020012	ZERO	saying, 'These last people worked [ONLY] one hour and you made them equal to us who have endured the burden of the day and the burning heat!'	0,063977935	-0,158190832
42007012	only	And as he approached the gate of the town, behold, a man who had died was being carried out, his mother's only son, and she was a widow, And a large crowd from the town was with her,	0,064385983	0,221908023
42009038	only	And behold, a man from the crowd cried out, saying, "Teacher, I beg you to look with concern on my son, because he is my only son!	0,065375599	0,223451671
42017018	NEG=except	Was no one found to turn back and give praise to God except this foreigner?"	0,067576264	0,487180205
66019012	NEG=except	Now his eyes were like a flame of fire, and on his head were many royal headbands having a name written that no one except he himself knows,	0,069458052	0,533512926
46002011	NEG=except	For who among men knows the things of a man, except the spirit of the man that is in him? Thus also no one knows the things of God except the Spirit of God,	0,072281348	0,479800892

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
41005037	NEG=except	And he did not allow anyone to follow along with him except Peter and James and John, the brother of James,	0,074279061	0,565883949
42005021	except=alone	And the scribes and the Pharisees began to reason, saying, "Who is this man who speaks blasphemies? Who is able to forgive sins except God alone?"	0,074926355	0,207655663
40011027	NEG=except	All things have been handed over to me by my Father, and no one knows the Son except the Father, and no one knows the Father except the Son and anyone to whom the Son wants to reveal him,	0,083773164	0,568815317
43017012	NEG=except	When I was with them, I kept them in your name, which you have given to me, and guarded them, and none of them has perished except the son of destruction, in order that the scripture would be fulfilled,	0,084373593	0,502989416
41012032	NEG=other=except	And the scribe said to him, "That is true, Teacher, You have said correctly that he is one and there is no other except him,	0,085735334	0,408416366
41009008	NEG=but=alone	And suddenly, looking around, they no longer saw anyone with them but Jesus alone,	0,086802789	0,518053298
45004009	ZERO	Therefore, is this blessing [ONLY] for those who are circumcised, or also for those who are uncircumcised? For we say, "Faith was credited to Abraham for righteousness,"	0,087602815	-0,243080553
43003018	one=and=only	The one who believes in him is not judged, but the one who does not believe has already been judged, because he has not believed in the name of the one and only Son of God,	0,092148956	0,251730648
44008001	except	And Saul was agreeing with his murder, Now there happened on that day a great persecution against the church in Jerusalem, and they were all scattered throughout the regions of Judea and Samaria, except the apostles,	0,093311548	0,186892217
43001018	one=and=only	No one has seen God at any time; the one and only, God, the one who is in the bosom of the Father — that one has made him known,	0,093375782	0,251093485

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
43001014	one=and=only	And the Word became flesh and took up residence among us, and we saw his glory, glory as of the one and only from the Father, full of grace and truth,	0,093416404	0,251229126
48006014	NEG=except	But as for me, may it never be that I boast, except in the cross of our Lord Jesus Christ, through whom the world has been crucified to me, and I to the world,	0,094035442	0,472763196
58011017	one=and=only	By faith Abraham, when he was tested, offered Isaac, and the one who received the promises was ready to offer his one and only son,	0,099581752	0,259280759
42008051	NEG=except	Now when he came to the house, he did not allow anyone to enter with him except Peter and John and James and the father and mother of the child,	0,102159663	0,560874627
44004012	NEG=other	And there is salvation in no one else, for there is no other name under heaven that is given among people by which we must be saved,"	0,102528505	0,248688251
43003016	one=and=only	For in this way God loved the world, so that he gave his one and only Son, in order that everyone who believes in him will not perish, but will have eternal life,	0,102534335	0,25842753
62004009	one=and=only	By this the love of God is revealed in us: that God sent his one and only Son into the world in order that we may live through him,	0,102680364	0,259165079
47012005	NEG=except	On behalf of such a person I will boast, but on behalf of myself I will not boast, except in my weaknesses,	0,110895901	0,445227281
46002002	NEG=except	For I decided not to know anything among you except Jesus Christ and him crucified,	0,111820059	0,541305552
40021019	NEG=except =only	And seeing a single fig tree by the road, he went to it and found nothing on it except leaves only, And he said to it, "May there be no more fruit from you forever, and the fig tree withered at once,	0,113036925	0,442299163
46009024	ZERO	Do you not know that those who run in the stadium all run, but [ONLY] one receives the prize? Run in such a way that you may win,	0,117057515	-0,246045085
43019015	NEG=except	Then those shouted, "Away with him! Away with him! Crucify him!" Pilate said to them,	0,120778169	0,588382156

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
		"Shall I crucify your king?" The chief priests replied, "We do not have a king except Caesar!"		
40017008	NEG=except =alone	And when they lifted up their eyes they saw no one except him — Jesus alone,	0,122562249	0,556620155
46001014	NEG=except	I give thanks to God that I baptized none of you except Crispus and Gaius,	0,122625	0,591475456
41006008	NEG=except =only	And he commanded them that they take along nothing for the journey except only a staff — no bread, no traveler's bag, no money in their belts —	0,124062779	0,543805383
42011029	NEG=except	And as the crowds were increasing, he began to say, "This generation is an evil generation! It demands a sign, and no sign will be given to it except the sign of Jonah!"	0,130350473	0,596173269
66014003	NEG=except	And they were singing something like a new song before the throne and before the four living creatures and the elders, and no one was able to learn the song except the one hundred forty-four thousand who had been bought from the earth,	0,130951829	0,60280274
40016004	NEG=except	An evil and adulterous generation seeks for a sign, and a sign will not be given to it except the sign of Jonah!" And he left them and went away,	0,132539089	0,616741605
40012039	NEG=except	But he answered and said to them, "An evil and adulterous generation desires a sign, and no sign will be given to it except the sign of the prophet Jonah!"	0,13265571	0,613988117
41002007	except=alone	"Why does this man speak like this? He is blaspheming! Who is able to forgive sins except God alone?"	0,13282094	0,180111916
42010042	but	But [ONLY] one thing is necessary, for Mary has chosen the better part, which will not be taken away from her,"	0,142324305	-0,194349507
46008006	ZERO	yet to us there is one God, the Father, from whom are all things, and we are for him, and there is [ONLY] one Lord, Jesus Christ, through whom are all things, and we are through him,	0,143399529	-0,190781928
51003022	ZERO	Slaves, obey your human masters in everything, not while being watched, as	0,151371161	-0,284382954

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
		people pleasers, but with sincerity of heart, fearing the Lord,		
44024021	other=than	other than concerning this one declaration that I shouted while standing there before them: 'I am being judged before you today concerning the resurrection of the dead!'"	0,167493347	0,092610932
49006006	ZERO	not while being watched, as people pleasers, but as slaves of Christ doing the will of God from the heart,	0,170354611	-0,290683063
40019017	ZERO	And he said to him, "Why are you asking me about what is good? There is one who is good, But if you want to enter into life, keep the commandments!"	0,174271483	0,015579604
44002015	ZERO	For these men are not drunk, as you assume, because it is the third hour of the day [ONLY],	0,209030349	-0,187313345
42017010	ZERO	Thus you also, when you have done all the things you were ordered to do, say, 'We are unworthy slaves; we have [ONLY] done what we were obligated to do,'"	0,278860596	-0,227007366
59004012	ZERO	There is [ONLY] one lawgiver and judge who is able to save and to destroy, But who are you to judge your neighbor?	0,315436181	-0,184105564
42012041	ZERO	And Peter said, "Lord, are you telling this parable [ONLY] for us, or also for everyone?"	0,322782895	-0,252283963
45003030	ZERO	since God is [ONLY] one, who will justify those who are circumcised by faith and those who are uncircumcised through faith,	0,325075613	-0,120322934
47003014	ZERO	But their minds were hardened, For until this very day, the same veil remains upon the reading of the old covenant, not being uncovered, because it is done away with in Christ,	0,327343789	-0,2269824
50003019	ZERO	whose end is destruction, whose God is the stomach, and whose glory is in their shame, the ones who think on earthly things,	0,336964848	-0,276606097
61002005	ZERO	and did not spare the ancient world, but preserved Noah, a proclaimer of righteousness, and seven others when he brought a flood on the world of the ungodly,	0,343284438	-0,231254111

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
41012029	be=one	Jesus answered, "The most important is, 'Listen, Israel! The Lord our God, the Lord is [ONLY] one,	0,348527466	-0,000796328
46009008	ZERO	I am not saying these things according to a human perspective, Or does the law not also say these things?	0,35997924	-0,229961834
40023010	ZERO	And do not be called teachers, because [ONLY] one is your teacher, the Christ,	0,363592647	-0,220574716
40023008	ZERO	But you are not to be called 'Rabbi,' because [ONLY] one is your teacher, and you are all brothers,	0,364895932	-0,232595883
65001012	ZERO	These are the ones feasting together without reverence, hidden reefs at your love feasts, caring for themselves, waterless clouds carried away by winds, late autumn trees without fruit, twice dead, uprooted,	0,3657346	-0,249766504
41014051	only	And a certain young man was following him, clothed only in a linen cloth on his naked body, And they attempted to seize him,	0,369782863	-0,123090836
40005046	ZERO	For if you love [ONLY] those who love you, what reward do you have? Do not the tax collectors also do the same?	0,396042877	-0,268108432
42006032	ZERO	"And if you love [ONLY] those who love you, what kind of credit is that to you? For even sinners love those who love them!	0,396042877	-0,268108432
42006034	ZERO	And if you lend [ONLY] to those from whom you expect to receive back, what kind of credit is that to you? Even sinners lend to sinners, so that they may get back an equal amount!	0,398913611	-0,233155974
59002019	ZERO	You believe that God is [ONLY] one; you do well, Even the demons believe, and shudder!	0,414759172	-0,195389346
40023009	ZERO	And do not call anyone your father on earth, for [ONLY] one is your heavenly Father,	0,415847096	-0,230033956
46014028	ZERO	But if there is no interpreter, he must be silent in the church, but let him speak [ONLY] to himself and to God,	0,417418275	-0,233584687
60003020	ZERO	who were formerly disobedient, when the patience of God waited in the days of Noah,	0,419481397	-0,249368458

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
		while an ark was being constructed, in which a [ONLY] few — that is, eight souls — were rescued through water,		
42006033	ZERO	For even if you do good [ONLY] to those who do good to you, what kind of credit is that to you? Even the sinners do the same!	0,431985177	-0,257306569
43012044	ZERO	But Jesus cried out and said, "The one who believes in me does not believe in me [ONLY], but in the one who sent me,	0,432353472	-0,269774451
48003020	ZERO	Now the mediator is not for one, but God is [ONLY] one,	0,435950994	-0,207003328
44010041	NEG=but	not to all the people but to us who had been chosen beforehand by God as witnesses, who ate and drank with him after he rose from the dead,	0,444511281	-0,198574659
50002021	ZERO	For they all seek their own interests, not [ONLY] those of Jesus Christ,	0,449334761	-0,236888279
46012019	ZERO	And if they all were [ONLY] one member, where would the body be?	0,453555542	-0,192884766
54002005	ZERO	For there is [ONLY] one God and one mediator between God and human beings, the man Christ Jesus,	0,453920345	-0,205514316
43008028	just	Then Jesus said to them, "When you lift up the Son of Man, then you will recognize that I am he, and I do nothing from myself, but just as the Father taught me, I say these things,	0,466408336	-0,189933727
46004019	ZERO	But I am coming to you soon, if the Lord wills, and I will know not [ONLY] the talk of the ones who have become arrogant, but the power,	0,467670413	-0,242352924
49004004	ZERO	[ONLY] one body and [ONLY] one Spirit (just as also you were called with one hope of your calling),	0,46935204	-0,181701292
54005009	ZERO	Let a widow be put on the list if she is not less than sixty years old, the wife of [ONLY] one husband,	0,475501389	-0,192842428
40007021	ZERO	"Not everyone who says to me, 'Lord, Lord,' will enter into the kingdom of heaven, but [ONLY] the one who does the will of my Father who is in heaven,	0,478712618	-0,208602206

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
41009037	ZERO	"Whoever welcomes one of the young children such as these in my name welcomes me, and whoever welcomes me does not welcome [ONLY] me, but the one who sent me,"	0,478862089	-0,281413247
45002028	ZERO	For the Jew is not [ONLY] §one outwardly, nor is circumcision outwardly, in the flesh,	0,499614661	-0,27381045
62003018	ZERO	Little children, let us not love with word [ONLY] or with tongue [ONLY], but in deed and truth,	0,501734891	-0,224957672
47012002	ZERO	I know a man in Christ fourteen years ago — whether in the body I do not know, or outside the body I do not know, [ONLY] God knows — such a man was caught up to the third heaven,	0,508599067	-0,20970781
49004005	ZERO	[ONLY] one Lord, [ONLY] one faith, [ONLY] one baptism,	0,509556643	-0,164698071
55003002	ZERO	for people will [ONLY] be lovers of themselves, lovers of money, boasters, arrogant, slanderers, disobedient to parents, ungrateful, unholy,	0,5199114	-0,245297867
43004042	ZERO	And they were saying to the woman, "No longer [ONLY] because of what you said do we believe, for we ourselves have heard, and we know that this one is truly the Savior of the world!"	0,533978232	-0,227860616
46012017	ZERO	If the whole body were [ONLY] an eye, where would the hearing be? If the whole were [ONLY] §hearing, where would the sense of smell be?	0,53449545	-0,213447766
46014027	ZERO	If anyone speaks in a tongue, it must be on one occasion [ONLY] two or at most three, and one after the other, and one must interpret,	0,538620171	-0,240710618
46012014	ZERO	For the body is not [ONLY] one member, but many,	0,540650113	-0,203746215
47012003	ZERO	and I know this man — whether in the body or apart from the body I do not know, [ONLY] God knows —	0,544777393	-0,226591495
46010024	ZERO	Let no one seek his own good [ONLY] but the good of the other,	0,545101279	-0,224461127

Verse	Code (ENG)	Text	WW Dim 1	WW Dim 2
45015001	ZERO	But we who are strong ought to bear the weaknesses of the weak, and not to please ourselves [ONLY],	0,54783648	-0,218710109
45004014	ZERO	For if [ONLY] those of the law are heirs, faith is rendered void and the promise is nullified,	0,548227552	-0,246324177
54003002	ZERO	Therefore the overseer must be irreproachable, the husband of [ONLY] one wife, temperate, self-controlled, respectable, hospitable, skillful in teaching,	0,554219702	-0,194348553
43008041	ZERO	You are doing the deeds of your father!" Then they said to him, "We were not born from sexual immorality! We have [ONLY] one father, God!"	0,557971271	-0,18841238
48003016	ZERO	Now to Abraham and to his descendant the promises were spoken, It does not say, "and to descendants," as concerning many, but as concerning [ONLY] one, "and to your descendant," who is Christ,	0,573598119	-0,197941896

Appendix F: Immediate sequence

Table F.1: The 20 verses of the immediate sequence domain used for Map 1

Verse	Penalty points	Text
42013013	3	And he placed his hands on her, and immediately she straightened up and glorified God.
40026074	4	Then he began to curse and to swear with an oath, "I do not know the man!" And immediately a rooster crowed.
42005013	4	And extending his hand he touched him, saying, "I am willing; be clean." And immediately the leprosy went away from him.
40020034	5	And having compassion, Jesus touched their eyes, and immediately they received their sight and followed him.
41001042	5	And immediately the leprosy went away from him and he was made clean.
40017018	6	And Jesus rebuked him, and the demon came out of him and the boy was healed from that hour .
41005042	6	and immediately the girl stood up and began walking around (for she was twelve years old). And immediately they were utterly and completely astonished.
43005009	6	And immediately the man became well and picked up his mat and began to walk. (Now it was the Sabbath on that day.)
40008003	7	And extending his hand he touched him, saying, "I am willing, be clean." And immediately his leprosy was cleansed.
41010052	8	And Jesus said to him, "Go, your faith has healed you." And immediately he regained his sight and began to follow him on the road.
44003007	8	And taking hold of him by the right hand, he raised him up, and immediately his feet and ankles were made strong.
44009018	8	And immediately something like scales fell from his eyes and he regained his sight and got up and was baptized,
44016018	8	And she was doing this for many days. But Paul, becoming greatly annoyed and turning around, said to the spirit, "I command you in the name of Jesus Christ to come out of her!" And it came out immediately .
44022013	8	came to me and stood by me and said to me, 'Brother Saul, regain your sight!' And at that same time I looked up at him and saw him.
41014072	9	And immediately a rooster crowed for the second time. And Peter remembered the statement, how Jesus had said to him, "Before the rooster crows twice, you will deny me three times," and throwing himself down, he began to weep.
42001064	9	And his mouth and his tongue were opened immediately , and he began to speak, praising God.
40014031	10	And immediately Jesus extended his hand and caught him and said to him, "You of little faith! Why did you doubt?"
42022060	10	But Peter said, "Man, I do not know what you are talking about!" And immediately , while he was still speaking, a rooster crowed.

Verse	Penalty points	Text
44016026	10	And suddenly there was a great earthquake, so that the foundations of the prison were shaken. And immediately all the doors were opened and all the bonds were unfastened.
44016033	10	And he took them at that very hour of the night and washed their wounds, and he himself was baptized at once , and all those of his household.

Table F.2: 'only' in immediate sequence, automatic extraction

Language	Translation	Tokens	Marker	Type (morph or word form)	Family
Colombian Inga	inb-x-bible	20	lla	M	Quechuan
Chayuco Mixtec	mih-x-bible	20	ñi	W	Otomanguean
Borong	ksr-x-bible	20	deen#	M	Nuclear Trans New Guinea
Mapé	mlh-x-bible	20	akon	W	Nuclear Trans New Guinea
Yau-Nungon	yuw-x-bible	20	gon#	M	Nuclear Trans New Guinea
Cofán	con-x-bible	20	yi#	M	Isolate
Chuukese	chk-x-bible	20	chök	W	Austronesian
Sio	xsi-x-bible	20	nâ	W	Austronesian
Yabem	jae-x-bible	20	geŋ	M	Austronesian
Kuo	xuo-x-bible	20	hoy	W	Atlantic-Congo
Sango	sag-x-bible	20	gi	W	Atlantic-Congo
Koorete	kqy-x-bible	19	ɸ	M	Ta-Ne-Omotoc
Tena Lowland Quichua	quw-x-bible	19	lla	M	Quechuan
Tuma-Irumu	iou-x-bible	19	gän#	M	Nuclear Trans New Guinea
Yopno	yut-x-bible	19	gin#	M	Nuclear Trans New Guinea
Aruamu	msy-x-bible	19	ra#	M	Lower Sepik-Ramu
Plapo Krumen	ktj-x-bible	19	-do	W	Kru
Kakua	cbv-x-bible	19	jeh#	M	Kakua-Nukak
Bola	bnp-x-bible	19	kunana	W	Austronesian
Pampangá	pam-x-bible	19	mu	W	Austronesian
Patpatar	gfk-x-bible	19	mon	W	Austronesian
Mapudungun	arn-x-bible	19	müten	W	Araucanian
Northern Oaxaca Nahuatl	nhy-x-bible	18	san	W	Uto-Aztecan

Language	Translation	Tokens	Marker	Type (morph or word form)	Family
Ticuna	tca-x-bible	18	tama#	M	Ticuna-Yuri
Northern Pastaza Quichua	qvz-x-bible	18	lla	M	Quechuan
San Martín Quechua	qvs-x-bible	18	lla	M	Quechuan
Cashibo-Cacataibo	cbr-x-bible	18	shi	M	Pano-Tacanan
Atatláhuca Mixtec	mib-x-bible	18	-ni#	M	Otomanguean
Jamiltepec Mixtec	mxt-x-bible	18	ri	W	Otomanguean
Ocoatepec Mixtec	mie-x-bible	18	-ni#	M	Otomanguean
Western Highland Chatino	ctp-x-bible	18	ti	W	Otomanguean
Gwahatike	dah-x-bible	18	po	W	Nuclear Trans New Guinea
Pijin	pis-x-bible- newworld	18	nomoa	W	Indo-European
Konai	kxw-x-bible	18	nou#	M	East Strickland
Arop-Lokep	apr-x-bible	18	leu	W	Austronesian
Kapingamarangi	kpg-x-bible	18	hua	W	Austronesian
Maskelynes	klv-x-bible	18	ŋai	W	Austronesian
Mekeo	mek-x-bible	18	mo	W	Austronesian
Mengen	mee-x-bible	18	mana	W	Austronesian
Movono	tgp-x-bible	18	purongo	W	Austronesian
Saposa	sps-x-bible	18	tsun	W	Austronesian
Tungag	lcm-x-bible	18	palau	W	Austronesian
Alladian	ald-x-bible	18	zri	W	Atlantic-Congo
Irigwe	iri-x-bible	18	we	W	Atlantic-Congo
Dangaleat	daa-x-bible	18	di	W	Afro-Asiatic
Kabyle	kab-x-bible	18	kan	W	Afro-Asiatic
El Nayar Cora	crn-x-bible- nayar	17	pu'u	W	Uto-Aztecan
El Nayar Cora	crn-x-bible- presidio	17	pu'u	W	Uto-Aztecan
Santa Teresa Cora	cok-x-bible	17	pu'u	W	Uto-Aztecan
Siona-Tetete	snn-x-bible- 2009	17	pu'u	W	Tucanoan
Akeu	aeu-x-bible	17	taivq-ail	W	Sino-Tibetan
Ayacucho Quechua	quy-x-bible	17	lla	M	Quechuan
Bolivar-North Chimborazo Highland Quichua	qug-x-bible- chimborazo2010	17	lla	M	Quechuan
Napo Lowland Quechua	qvo-x-bible	17	lla	M	Quechuan
North Junín Quechua	qvn-x-bible	17	la	M	Quechuan

Language	Translation	Tokens	Marker	Type (morph or word form)	Family
Djambarrpuyngu	djr-x-bible	17	yan	W	Pama-Nyungan
Tataltepec Chatino	cta-x-bible	17	ti	W	Otomanguean
Pijin	pis-x-bible	17	nomoa	W	Indo-European
Bine	bon-x-bible	17	taatu	W	Eastern Trans-Fly
Shawi	cbt-x-bible	17	chin#	M	Cahuapanan
Wuvulu-Aua	wuv-x-bible	17	ua	W	Austronesian
Tetelcingo Nahuatl	nhg-x-bible	16	sa	W	Uto-Aztecan
Pisaflores Tepehua	tpp-x-bible	16	wa	W	Totonacan
Khiamniungan Naga	kix-x-bible	16	lu#	M	Sino-Tibetan
Huaylla Wanca Quechua	qvw-x-bible	16	lla	M	Quechuan
Imbabura Highland Quichua	qvi-x-bible	16	lla	M	Quechuan
Peñoles Mixtec	mil-x-bible	16	-ni	M	Otomanguean
Ixil	ixl-x-bible-nebaj	16	kuxh	W	Mayan
Bislama	bis-x-bible	16	nomo	W	Indo-European
Guambiano	gum-x-bible	16	tø#	M	Barbacoan
Purepecha	tsz-x-bible	15	jk	M	Tarascan
Western Highland Purepecha	pua-x-bible	15	jk	M	Tarascan
Lahu Shi	lhi-x-bible	15	lehax	W	Sino-Tibetan
Eastern Apurímac Quechua	qve-x-bible	15	lla	M	Quechuan
Tzotzil	tzo-x-bible- newworld	15	no'ox	W	Mayan
Guayabero	guo-x-bible	15	kal	M	Guahiboan
Kenga	kyq-x-bible	15	sum	W	Central Sudanic
Mutu	tuc-x-bible- patabuang	15	moghon	W	Austronesian
Tagabawa	bgs-x-bible	15	dád	W	Austronesian
Vengo	bav-x-bible	15	she'	W	Atlantic-Congo
Western Bolivian Guaraní	gnw-x-bible	14	ño	M	Tupian
Chiquihuitlán Mazatec	maq-x-bible	14	ni	W	Otomanguean
Komba	kpf-x-bible	14	âk#	M	Nuclear Trans New Guinea
Popti'	jac-x-bible	14	ñe	M	Mayan
Doromu-Koki	kqc-x-bible	14	maka	W	Manubaran
Marathi	mar-x-bible	14	च#	M	Indo-European
Ga'dang	gdg-x-bible	14	elang	M	Austronesian

Language	Translation	Tokens	Marker	Type (morph or word form)	Family
Keapara	khz-x-bible	14	mo#	M	Austronesian
Madak	mmx-x-bible	14	mun	W	Austronesian
Mutu	tuc-x-bible- patabuyaang	14	mon	W	Austronesian
Sango	sag-x-bible- newworld	14	gi	W	Atlantic-Congo
Eastern Bolivian Guaraní	gui-x-bible	13	ño#	M	Tupian
Cañar-Azuay-South Chimborazo Highland Quichua	qxr-x-bible	13	lla	M	Quechuan
Karajá	kpj-x-bible	13	le	M	Nuclear-Macro-Je
Melpa	med-x-bible	13	mint	W	Nuclear Trans New Guinea
Poqomchi'	poh-x-bible- western	13	xa	W	Mayan
Yuracaré	yuz-x-bible	13	jti	M	Isolate
Central Cagayan Agta	agt-x-bible	13	la	W	Austronesian
Halia	hla-x-bible	13	puku	W	Austronesian
Lowland Tarahumara	tac-x-bible	12	pe	W	Uto-Aztecan
Huaylas Ancash Quechua	qwh-x-bible	12	lla	M	Quechuan
Panao Huánuco Quechua	qxh-x-bible	12	lla	M	Quechuan
Gumatj	gmn-x-bible	12	yana	W	Pama-Nyungan
Angal Heneng	akh-x-bible	12	bombor	W	Nuclear Trans New Guinea
Kalam	kmh-x-bible- minimib	12	nep	W	Nuclear Trans New Guinea
Kobon	kpw-x-bible	12	nöp	W	Nuclear Trans New Guinea
Aekyom	awi-x-bible	12	sa#	M	Kamula-Elevala
Limbum	lmp-x-bible	12	ku	W	Atlantic-Congo
Mossi	mos-x-bible- catholic	12	bala	W	Atlantic-Congo
Mündü	muh-x-bible	12	bü	W	Atlantic-Congo
Isthmus-Mecayapan Nahuatl	nhx-x-bible	11	san#	M	Uto-Aztecan
Isthmus-Mecayapan Nahuatl	nhx-x-bible- revised	11	san#	M	Uto-Aztecan
Akha	ahk-x-bible	11	teh ₂ -eh [~]	W	Sino-Tibetan

Language	Translation	Tokens	Marker	Type (morph or word form)	Family
North Bolivian Quechua	qul-x-bible-2006	11	lla	M	Quechuan
South Bolivian Quechua	quh-x-bible-1976	11	lla	M	Quechuan
South Bolivian Quechua	quh-x-bible-1993	11	lla	M	Quechuan
South Bolivian Quechua	quh-x-bible-chumacharazani	11	lla	M	Quechuan
Inoke-Yate	ino-x-bible	11	ke#	M	Nuclear Trans New Guinea
Siroi	ssd-x-bible	11	ndo	W	Nuclear Trans New Guinea
Chol	ctu-x-bible-tili	11	jach	W	Mayan
Tzotzil	tzo-x-bible-chamula	11	no'ox	W	Mayan
Napu	npv-x-bible	11	pea	W	Austronesian
Southwest Tanna	nwi-x-bible	11	əmə	W	Austronesian
Bafut	bfd-x-bible	11	tsi'i	W	Atlantic-Congo
Northwest Gbaya	gya-x-bible	11	né	W	Atlantic-Congo
Bolivar-North Chimborazo Highland Quichua	qug-x-bible-chimborazo	10	lla	M	Quechuan
Huallaga Huánuco Quechua	qub-x-bible	10	lla	M	Quechuan
Huamalíes-Dos de Mayo Huánuco Quechua	qvh-x-bible	10	la	M	Quechuan
Margos-Yarowilca-Lauricocha Quechua	qvm-x-bible	10	la	M	Quechuan
Magdalena Peñasco Mixtec	xm-x-bible	10	-ni	M	Otomanguean
Gujarati	guj-x-bible	10	જ	W	Indo-European
Dupaninan Agta	duo-x-bible	10	la	W	Austronesian
North Bolivian Quechua	qul-x-bible-1985	9	lla	M	Quechuan
Southern Conchucos Ancash Quechua	qxo-x-bible	9	lla	M	Quechuan
Kamano	kbq-x-bible	9	ke	M	Nuclear Trans New Guinea
Guinea Kpelle	gkp-x-bible	9	nó	W	Mande
Loma (Liberia)	lom-x-bible	9	no	W	Mande
Urarina	ura-x-bible	9	acha	M	Isolate
Kanasi	soq-x-bible	9	os	W	Dagan

Language	Translation	Tokens	Marker	Type (morph or word form)	Family
Dawawa	dww-x-bible	9	ḡa#	M	Austronesian
Lote	uvl-x-bible	9	mana	W	Austronesian
Sa'a	apb-x-bible	9	mola	W	Austronesian
Momuna	mqf-x-bible	8	soonoo	W	Somahai
Kwoma	kmo-x-bible	8	ba	M	Sepik
Cusco Quechua	quz-x-bible	8	lla	M	Quechuan
Bimin	bhl-x-bible	8	kuw	W	Nuclear Trans New Guinea
Rotokas	roo-x-bible	8	raga	W	North Bougainville
Poqomchi'	poh-x-bible-eastern	8	xa	W	Mayan
Kuot	kto-x-bible	8	it	W	Isolate
Kadiwéu	kbc-x-bible	8	ok	M	Guaicuruan
Bauzi	bvz-x-bible	8	gi	W	Geelvink Bay
Umanakaina	gdn-x-bible	8	mena	W	Dagan
Iwal	kbm-x-bible	8	ge	W	Austronesian
Manam	mva-x-bible	8	-la#	M	Austronesian
Nyindrou	lid-x-bible	8	le	W	Austronesian
Lenje	leh-x-bible	8	bo#	M	Atlantic-Congo
Tswana	tsn-x-bible-1908	8	fela	W	Atlantic-Congo
Culina	cul-x-bible	8	ra#	M	Arawan
Dadibi	mps-x-bible	7	naga	W	Teberan
Limbu	lif-x-bible-2009	7	o□#	M	Sino-Tibetan
Northern Conchucos Ancash Quechua	qxn-x-bible	7	lla	M	Quechuan
Nii	nii-x-bible	7	mendpił	W	Nuclear Trans New Guinea
Mosetén-Chimané	cas-x-bible	7	momo'	W	Isolate
Meyah	mej-x-bible	7	ojgomu	W	East Bird's Head
Gor	gqr-x-bible	7	par	W	Central Sudanic
Nangnda	bjv-x-bible	7	par	W	Central Sudanic
Fijian	fij-x-bible-hindi	7	ga	W	Austronesian
Mbula	mna-x-bible	7	men	W	Austronesian
Bafia	ksf-x-bible	7	lɔŋ	W	Atlantic-Congo
Kako	kkj-x-bible	7	ndi	W	Atlantic-Congo

Appendix G: Double exponence

Table G.1: Double exponence of restrictive, automatic measurement

Language	Translation	Tokens	Marker 1	Marker 2	Family
Dhao	nfa-x-bible.txt	126	_ di _	_ dhoka _	Austronesian
Kupang Malay	mkn-x-bible.txt	106	_ cuma _	_ sa _	Austronesian
Angaataha	agm-x-bible.txt	90	_ nehi _	_ hih _	Angan
San Blas Kuna	cuk-x-bible.txt	88	_ unnila _	_ bi _	Chibchan
Eastern Lowland Kenyah	whk-x-bible.txt	87	_ bang _	_ le _	Austronesian
Eastern Bru	bru-x-bible.txt	80	_ óng _	_ sâng _	Austroasiatic
Helong	heg-x-bible.txt	70	_ suma _	_ sii _	Austronesian
Ayautla Mazatec	vmy-x-bible.txt	69	_ tu _	_ sani _	Otomanguean
Palikúr	plu-x-bible.txt	64	_ nen _	_ he _	Arawakan
Termanu	twu-x-bible.txt	64	_ ka'da _	_ mesa _	Austronesian
Batak Angkola	akb-x-bible.txt	60	_ hum _	_ sajo _	Austronesian
Jarai	jra-x-bible.txt	59	_ kơng _	_ đơ _	Austronesian
Bora	boa-x-bible.txt	57	_ ré _	_ apáá _	Boran
Lowland Tarahumara	tac-x-bible.txt	55	_ pe _	_ cho _	Uto-Aztecan
Iban	iba-x-bible.txt	54	_ semina _	_ aja _	Austronesian
Highland Puebla Nahuatl	azz-x-bible.txt	53	_ sayó _	_ san _	Uto-Aztecan
Kele-Foma	khy-x-bible.txt	51	_ ko _	_ kongo _	Atlantic-Congo
Baba Malay	mbf-x-bible.txt	49	_ saja _	_ chuma _	Austronesian
Kutep	kub-x-bible.txt	46	_ ámām _	_ nyáng _	Atlantic-Congo
Karajá	kpj-x-bible.txt	44	_ le _	_ sohoji _	Nuclear-Macro-Je
Angal Heneng	akh-x-bible.txt	43	_ bombor _	_ was _	Nuclear Trans New Guinea
Hawu	hvn-x-bible.txt	42	_ wata _	_ we _	Austronesian
Lomeriano-Ignaciano Chiquitano	cax-x-bible-2002.txt	37	_ tai _	_ kunauntaña _	Chiquitano
Ambulas	abt-x-bible-wosera.txt	37	_ male _	_ nakurak _	Ndu
Bimin	bhl-x-bible.txt	36	_ kuw _	_ makmak _	Nuclear Trans New Guinea
Wapishana	wap-x-bible.txt	35	_ soo _	_ karikaonan _	Arawakan

Language	Translation	Tokens	Marker 1	Marker 2	Family
Mapudungun	arn-x-bible.txt	34	_ müten _	_ re _	Araucanian
Minangkabau	min-x-bible.txt	34	_ hanyo _	_ sajo _	Austronesian
Southeastern Tepehuan	stp-x-bible.txt	34	_ dai _	_ pix _	Uto-Aztecan
Sasak	sas-x-bible.txt	32	_ cume _	_ doang _	Austronesian
Yuracaré	yuz-x-bible.txt	32	_ jti _	_ lëmmui _	Isolate
Uighur	uig-x-bible-cyrillic.txt	31	_ ла _	_ пәкәт _	Turkic
South Barisan Malay	pse-x-bible.txt	30	_ ajau _	_ cuman _	Austronesian
Eastern Panjabi	pan-x-bible-newworld.txt	30	_ ਸਿਰਫ਼ _	_ ਰੀ _	Indo-European
Lalana Chinantec	cnl-x-bible.txt	30	_ 'n#n ³¹ _	_ hua ² _	Otomanguean
Uighur	uig-x-bible-arabic.txt	30	_ لا _	_ پەقەت _	Turkic
Uighur	uig-x-bible-romanized.txt	30	_ la _	_ peqet _	Turkic
Ngaju	nij-x-bible.txt	29	_ baya _	_ bewei _	Austronesian
Standard Indonesian	ind-x-bible-kabarbaik.txt	29	_ hanya _	_ saja _	Austronesian
Standard Indonesian	ind-x-bible-terjemahanbaru.txt	29	_ hanya _	_ saja _	Austronesian
Siane	snp-x-bible-komongu.txt	29	_ ko _	_ lawoko _	Nuclear Trans New Guinea
Northern Khmer	kxm-x-bible.txt	28	_ តា _	_ បៀន _	Austroasiatic
Buginese	bug-x-bible.txt	28	_ bawang _	_ banna _	Austronesian
Lampung Api	ljp-x-bible.txt	28	_ angkah _	_ gaoh _	Austronesian
Gujarati	guj-x-bible.txt	28	_ જ _	_ ફક્ત _	Indo-European
Angguruk Yali	yli-x-bible.txt	28	_ eneg _	_ we _	Nuclear Trans New Guinea
Batak Dairi	btd-x-bible.txt	27	_ pellin _	_ sambing _	Austronesian
Angor	agg-x-bible.txt	27	_ yangiri _	_ moani _	Senagi
Javanese	jav-x-bible-1994.txt	26	_ mung _	_ waé _	Austronesian
Tabaru	tby-x-bible.txt	26	_ ka _	_ duga _	North Halmahera
Bima	bhp-x-bible.txt	25	_ mpa _	_ cuma _	Austronesian
Da'a Kaili	kzf-x-bible.txt	25	_ aga _	_ lau _	Austronesian
Kenga	kyq-x-bible.txt	25	_ sum _	_ kaliŋ _	Central Sudanic
Luo (Kenya and Tanzania)	luo-x-bible.txt	25	_ kende _	_ mana _	Nilotic
Kara-Kalpak	kaa-x-bible.txt	25	_ тек _	_ ғана _	Turkic

Language	Translation	Tokens	Marker 1	Marker 2	Family
Kara-Kalpak	kaa-x-bible-cyrillic.txt	25	_ tek _	_ ғана _	Turkic
Kara-Kalpak	kaa-x-bible-latin.txt	25	_ tek _	_ g'ana _	Turkic
Adamawa Fulfulde	fub-x-bible.txt	24	_ tan _	_ sey _	Atlantic-Congo
Tupuri	tui-x-bible.txt	24	_ tawa _	_ diñ _	Atlantic-Congo
Central Aymara	ayr-x-bible-2011.txt	24	_ kiw _	_ sapa _	Aymaran
Cofán	con-x-bible.txt	24	_ yi _	_ aquia _	Isolate
Dangaleat	daa-x-bible.txt	23	_ di _	_ illa _	Afro-Asiatic
Lomeriano-Ignaciano Chiquitano	cax-x-bible-1980.txt	23	_ tai _	_ cunaunta _	Chiquitano
Tobelo	tlb-x-bible.txt	23	_ duga- duga _	_ dika _	North Halmahera
Iraqw	irk-x-bible.txt	22	_ kilós _	_ har _	Afro-Asiatic
Mofu-Gudur	mif-x-bible.txt	22	_ gway _	_ si _	Afro-Asiatic
Javanese	jav-x-bible-1981.txt	22	_ mung _	_ bae _	Austronesian
Urdu	urd-x-bible-2007.txt	22	_ صرف _	_ ہی _	Indo-European
Thai	tha-x-bible-newcontemporary.txt	22	_ เพียง _	_ เดียว _	Tai-Kadai
Mbunda	mck-x-bible.txt	21	_ lika _	_ kuvanga _	Atlantic-Congo
Lango (Uganda)	laj-x-bible.txt	21	_ keken _	_ kono _	Nilotic
Amarasi	aaz-x-bible.txt	20	_ suma _	_ aah _	Austronesian
Sundanese	sun-x-bible-informal.txt	20	_ ngan _	_ bae _	Austronesian
Marathi	mar-x-bible.txt	20	_ च _	_ फक्त _	Indo-European
Matal	mfh-x-bible.txt	19	_ pəra _	_ say _	Afro-Asiatic
South Wa	prk-x-bible.txt	19	_ khaing _	_ ngie _	Austroasiatic
Zhenkang Wa	wbm-x-bible.txt	19	_ khaing _	_ ngie _	Austroasiatic
Uripiv-Wala-Rano-Atchin	upv-x-bible.txt	19	_ kobbong _	_ san _	Austronesian
Kazakh	kaz-x-bible.txt	19	_ ғана _	_ тек _	Turkic
Balinese	ban-x-bible.txt	18	_ wantah _	_ kewanten _	Austronesian
Patpatar	gfk-x-bible.txt	18	_ mon _	_ sen _	Austronesian
Standard Indonesian	ind-x-bible-firman.txt	18	_ hanya _	_ saja _	Austronesian
Kanite	kmu-x-bible.txt	18	_ 'age _	_ ke _	Nuclear Trans New Guinea
Usila Chinantec	cuc-x-bible.txt	18	_ pa ² _	_ jmah ³ _	Otomanguean

Language	Translation	Tokens	Marker 1	Marker 2	Family
Ewe	ewe-x-bible-newworld.txt	17	_ ko _	_ negbe _	Atlantic-Congo
Limbum	lmp-x-bible.txt	17	_ ku _	_ caè'caè' _	Atlantic-Congo
Makaa	mcp-x-bible.txt	17	_ nji _	_ ngwûd _	Atlantic-Congo
Central Khmer	khm-x-bible-2011.txt	17	_ តែ _	_ ប៉ុណ្ណេះ _	Austroasiatic
Uma	ppk-x-bible.txt	17	_ -wadi _	_ muntu' _	Austronesian
Cuiba	cui-x-bible.txt	17	_ saya _	_ meisa _	Guahiboan
Urdu	urd-x-bible-devanagari.txt	17	_ सिर्फ _	_ ही _	Indo-European
Urdu	urd-x-bible-international.txt	17	_ صرف _	_ ہی _	Indo-European
Western Kayah	kyu-x-bible.txt	17	_ ၵိ _	_ ဝံ _	Sino-Tibetan