Maltese *kull*: An areal-diachronic perspective

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This paper presents a syntactic and semantic study of universal quantification in Maltese, from an areal-diachronic perspective. In many languages of the Mediterranean-African area, a universal quantifier may occur in two constructions: preceding a definite plural noun, with a non-distributive interpretation "all"; and preceding an indefinite singular noun, with a distributive interpretation "every". Of these two constructions, the former is the unmarked member of the pair, and hence the basic meaning of the universal quantifier is non-distributive "all" rather than distributive "every". Evidence in support of this claim includes (a) the more limited syntactic distribution of the indefinite singular construction; (b) the absence of an indefinite singular construction with distributive interpretation for any quantifiers other than the universal one; and (c) the universal semantic markedness of distributivity, as reflected in quantifier-scope judgements across the world's languages. In some North African dialects of Arabic, cognates of the Classical Arabic universal quantifier *kull* have undergone a variety of interesting historical developments. In several Maghrebi dialects, an additional construction has evolved, with the universal quantifier in postnominal position, as either an adjective or a prepositional phrase; in some of these dialects, including Maltese, this appears to have triggered the loss of the construction with the universal quantifier preceding a definite plural NP. These diachronic developments are argued to provide yet additional support for the characterization of *kull* and its cognates as basically non-distributive. In conclusion, this paper examines the implications of the data with regard to current theories of quantification. Whereas linguists generally take distributive "every" to be the prototypical quantifier, philosophers, when constructing universal generalizations, often harbour a conflicting preference for non-distributive "all". The Maltese and North-African facts appear to suggest that in this particular case, the philosophers are actually on firmer grammatical ground than their fellow linguists.

1. Introduction

This paper is concerned with the syntax and semantics of universal quantification in Hebrew and Arabic, focussing on Modern Hebrew *kol* 'all' and the cognates of Classical Arabic *kull* 'all' in the Arabic vernaculars of West Asia and North Africa.

The point of departure of this paper is a cross-linguistic typology of universal quantifiers developed in Gil (1991, 1995b). Universal quantifiers in Hebrew and in some Arabic dialects provide further support for the proposed typology. In contrast, universal quantifiers in a number of North-African Arabic dialects present certain analytical problems, providing prima facie counterexamples to some of the generalizations underlying the abovementioned typology. However, closer examination

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of the data in question ends up providing strong further support for the typology of universal quantifiers.

Section 2 of this paper looks at some basic facts regarding universal quantification in English. Building on these observations, Section 3 presents some cross-linguistic generalizations about universal quantification in the languages of the world. These two sections set the stage for Section 4 and an analysis of universal quantification in Hebrew. Finally, Section 5 considers some synchronic and diachronic aspects of universal quantification in several dialects of Arabic, from Israel, Malta, Morocco and Tunisia.

2. *Universal quantifiers in English*

Ask a linguist for an example of a quantifier, and the answer is likely to be '*every*'. For many linguists, *every* is the prototypical, garden-variety quantifier, that which appears in the stock example sentences, *Every man loves a woman*, *Every man who owns a donkey beats it*, and so forth. Thus, in the semantic typology of NPs proposed by Kamp (1981), Heim (1982), Partee (1987) and others, NPs of the form [*every* N] are generally considered to be the most characteristic exemplars of the type referred to as 'quantificational' or 'essentially quantificational'.

Philosophers, however, when constructing universal generalizations, seem to harbour a conflicting preference for *all*, as in *All men are mortal*, *All ravens are black* – even though the intended interpretations are generally those that would be unambiguously expressible with *every*. Indeed, it is the letter *a* from *all* which, when capitalized and turned upside-down, forms the symbol for the logicians' universal quantifier ∀.

Ironically, it is the philosophers who would appear to be on firmer linguistic ground than their fellow linguists. Syntactic and semantic evidence supports the claim that *all* is the basic or simple universal quantifier. As for *every*, far from being prototypical, it is in fact among the most exceptional of quantifiers in its syntactic and semantic behaviour.

As has been frequently observed (Vendler 1967:72-76, Hogg 1977:105-140, Aldridge 1982:212-235, and others), *all* allows either distributive or non-distributive interpretations, while *every* forces distributive interpretations. Consider the contrast between the following two sentences:

(1) a. All the men carried three suitcases
b. Every man carried three suitcases

Whereas in (1a), the men may have acted individually or collectively, in (1b) they may only have acted individually. Similarly, whereas in (1a), the men may have carried three suitcases per person or between them, in (1b) they must have carried three suitcases per person (though these could, accidentally, have been the same three suitcases). The interpretations of the above sentences may thus be represented pictorially as in Figure 1.

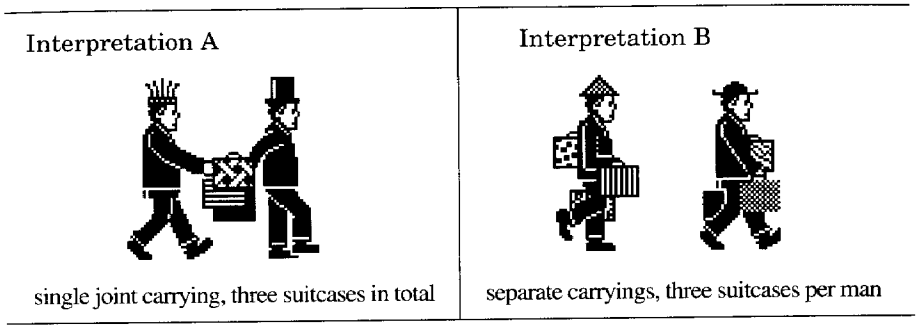

Figure 1. Interpretations of Sentences (1a) and (1b)

While sentence (1a) allows either interpretation A or interpretation B, sentence (1b) allows only interpretation B.

Thus, the effect of *every* is to force a relationship of distributivity, in which the NP containing *every* is interpreted as distributive-key, and some other constituent – in the above examples, the predicate – is interpreted as distributive-share. The distinction between (1a) and (1b) may accordingly be represented as follows:

(2) a. [All the men]$_{(key)}$ [carried three suitcases]$_{(share)}$
b. [Every man]$_{key}$ [carried three suitcases]$_{share}$

The relationship of distributivity is represented by means of indexation. In both sentences, the subject NP is indexed as distributive-key, and the predicate as distributive-share. However, while indexation is optional (indicated with parentheses) with *all* in (2a), it is obligatory with *every* in (2b).[1]

Thus, while *all* permits both non-distributive and distributive-key interpretations, *every* forces distributive-key interpretations. Accordingly, whereas *all* is unmarked, or *simple*, *every* is marked as *distributive-key*. The quantifier *every* is thereby endowed with portmanteau semantic structure, combining the quantificational force of a universal

quantifier with an additional distributive-key denotation. By dint of its portmanteau structure, *every* is more highly marked than its simple, non-distributive counterpart *all*.

The characterization of simple, non-distributive *all* as unmarked, and of distributive-key *every* as its more highly marked counterpart, is supported by several independent syntactic and semantic arguments. First, *every* is semantically exceptional, in that most other English quantifiers, including *all*, *most*, *many*, *several*, *some* and the numerals, are unmarked for distributivity. Secondly, *every* is formally exceptional in its association with singular morphology, contrasting with most other semantically plural English quantifiers, again including *all*, *most*, *many*, *several*, *some* and the numerals (greater than one), which take plural morphology. Thirdly, distributivity is itself a marked semantic relation, in that, in constructions unmarked for distributivity, for example sentences such as *Two men carried three suitcases*, the preferred interpretations are generally non-distributive. For reasons of space, these arguments cannot be presented here in full; for details, the reader is referred to Gil (1991, 1993b, 1995b).[2]

3. *Universal quantifiers in the languages of the world*

Further arguments in support of the characterization of *all* and *every* as unmarked and more highly marked universal quantifiers respectively derive from the distribution and form of simple and distributive-key universal quantifiers across the world's languages. Some generalizations governing the cross-linguistic inventories of universal quantifiers are given below:

(3) *Universal 1:*
If a language possesses a distributive-key universal quantifier, then it possesses a simple universal quantifier.
Universal 2:
In languages that possess both simple and distributive-key universal quantifiers, if the distributive-key universal quantifier is native, then the simple universal quantifier is native.
Universal 3:
In languages that possess both simple and distributive-key universal quantifiers, if the two are morphologically related, then the distributive-key universal quantifier is derived from the simple universal quantifier by a morphosyntactic process.

Some evidence in support of the above three universals is presented in Table 1 below, providing a classification of the world's languages into

Table 1. A Cross-Linguistic View of Universal Quantifiers

	Language	*Simple Universal Quantifier*	*Distributive-Key Universal Quantifier*
A	English	all	every
	Latvian	visi	katrs
	Godoberi	t'orda	ži- ži-
	Malay	semua	setiap
	Mandarin	suǒyǒu	měi
B	Swahili	-ote	kila
	Tarifit Berber	qaʕ	kur
	Turkish	bütün	her
	Lezgian	wiri	har
	Punjabi	saaree	har
C	Lakhota	iyuha	iyohila
	Irish	uile	'chuile
	Georgian	q'vela	q'oveli
	Russian	vse	vsjakij
	Serbo-Croatian	svi	svaki
D	Maricopa	mat čaamk	–
	Zulu	-onke	–
	Malayalam	muẓuwan	–
	White Hmong	txhua	–
	Yukaghir	jawnom	–
E	Straits Salish	–	–
	Warlpiri	–	–

five groups, with respect to their inventories of simple and distributive-key universal quantifiers.[3]

Universal 1 says that simple universal quantifiers are more common cross-linguistically than their distributive-key counterparts. Specifically, Universal 1 allows for three types of languages: with both simple and distributive-key universal quantifiers (groups A, B and C); with simple but no distributive-key universal quantifiers (group D);[4] and with neither simple nor distributive-key universal quantifiers (group E). However, it rules out the existence of a fourth type of language, with distributive-key but no simple universal quantifiers. Thus, the existence of 'group D' languages such as Maricopa, Zulu, Malayalam, White Hmong and Yukaghir, with simple but no distributive-key universal quantifiers, supports the characterization of simple

universal quantifiers as unmarked, and distributive-key universal quantifiers as their more highly marked counterparts.

Whereas Universal 1 applies to all languages, Universals 2 and 3 are restricted in their scope to languages possessing both simple and distributive-key universal quantifiers. Universal 2 distinguishes between universal quantifiers of native and loan varieties, the latter being those whose etymologies show that they have been borrowed from some other language. Universal 2 states that simple universal quantifiers are more likely to be native, while their distributive-key counterparts are more likely to be loan. In doing so, it allows for three types of languages: with native simple and distributive-key universal quantifiers (groups A and C); with native simple universal quantifiers but loan distributive-key universal quantifiers (group B);[5] and with loan simple and distributive-key universal quantifiers (hitherto unattested). However, it rules out the existence of a fourth type of language, with loan simple universal quantifiers but native distributive-key universal quantifiers. Again, the existence of 'group B' languages such as Swahili, Tarifit Berber, Turkish, Lezgian and Punjabi, with native simple universal quantifiers alongside loan distributive-key universal quantifiers, further supports the characterization of simple and distributive-key universal quantifiers as unmarked and marked varieties respectively.

Universal 3 pertains to the internal morphological structure of universal quantifiers. It allows for two types of languages: with formally unrelated simple and distributive-key universal quantifiers (groups A and B); and with distributive-key universal quantifiers that are formally derived from their simple universal-quantifier counterparts (group C).[6] However, it rules out the existence of languages in which simple and distributive-key universal quantifiers are formally related in other ways – for example the simple universal quantifier being derived from the distributive-key one, or both being derived from some other form. Once more, the existence of 'group C' languages such as Lakhota, Irish, Georgian, Russian and Serbo-Croatian, in which distributive-key universal quantifiers are obtained from their simple universal-quantifier counterparts by the addition of a morphosyntactic marker, provides yet additional support for the characterization of simple and distributive-key universal quantifiers as unmarked and marked types respectively.

4. Universal quantifiers in Hebrew

In several languages around the the Mediterranean and in Africa, there are no distinct lexical counterparts to English *all* and *every;* rather, the semantic contrast between simple and distributive-key universal

quantification is expressed structurally. Specifically, in such languages, the same lexical item may occur either with plural morphology, in which case it is interpreted as a simple universal quantifier, or, alternatively, with singular morphology, in which latter case it is interpreted as a distributive-key universal quantifier. Among the languages exhibiting this pattern of universal quantification are Hebrew and Arabic.[7]

Following is an example from Hebrew:[8]

(4) a. kol ha?anašim saḥvu šaloš mizvadot
A the-man-PL:M carry-PST-3:PL three-F suitcase-PL:F
'All the men carried three suitcases'

b. koli iš saḥav šaloš mizvadot
A man carry-PST-3:SG:M three-F suitcase-PL:F
'Every man carried three suitcases'

In (4a), the universal quantifier *kol* occurs with plural morphology, taking the definite plural head noun *ha anašim*, and forming an NP which triggers plural verbal agreement; in this construction, *kol* is glossed as the simple universal quantifier 'all'. In contrast, in (4b), the same universal quantifier *kol* occurs with singular morphology, taking the indefinite singular head noun *iš*, and forming an NP which triggers singular verbal agreement; in this case, *kol* is glossed as the distributive-key universal quantifier 'every'.

Each of the three arguments cited in Section 2, supporting the characterization of *all* and *every* as unmarked and marked variants respectively, can be invoked to support the claim that in examples such as the above, the construction with plural morphology, as in (4a), is unmarked, whereas its counterpart with singular morphology, as in (4b), is more highly marked.

First, the singular construction, with distributive-key interpretation, is semantically exceptional, in that most other Hebrew quantifiers are unmarked for distributivity. For example, in (5) below, the quantifiers *harbe* 'many', *mispar* 'several', *kama* 'some' and *šney* 'two' are unmarked for distributivity, permitting either non-distributive or distributive interpretations:

(5) harbe / mispar / kama / šney ?anašim saḥvu
many / number-CON:SG:M / some / two-M man-PL:M carry-PST-3:PL
šaloš mizvadot
three-F suitcase-PL:F
'Many / several / some / two men carried three suitcases'

Thus, whereas *kol* in the plural construction in (4a) resembles other

quantifiers, *kol* in the singular construction in (4b) is exceptional in that it forces a distributive interpretation.

Secondly, the singular construction is formally exceptional, in that most other semantically plural quantifiers in Hebrew take plural morphology. For example, in (5) above, the quantifiers *harbe* 'many', *mispar* 'several', *kama* 'some' and *šney* 'two' take the plural head noun *anašim*, and form an NP triggering plural verbal agreement. Again, whereas *kol* in the plural construction in (4a) resembles other quantifiers, *kol* in the singular construction in (4b) is exceptional by dint of its singular morphology. A similar pattern obtains also with respect to the number marking of anaphors. Whereas most semantically plural quantifiers in Hebrew, including *kol* in the plural construction, license plural bound and discourse anaphors, *kol* in the singular construction exhibits an exceptional pattern, as evidenced by the following examples (anaphors indicated in italics):

(6) a. kol ha?anašim yexolim lehasig et hamatarot
A the-men-PL:M can-PRS-PL:M INF-achieve ACC the-goal-PL:F
šelahem im hem yenasu maspik hazak
of-3:PL:M if 3:PL:M FUT-3:PL:M-try enough hard
'All men can achieve their goals if they try hard enough'

b. koliš yaxol lehasig et hamatarot
A man can-PRS-SG:M INF-achieve ACC the-goal-PL:F
šelo im *hu* yenase maspik hazak
of-3:SG:M if 3:SG:M FUT-3:SG:M-try enough hard
'Every man can achieve his goals if he tries hard enough'

(7) a. kol hamenaċim yizku bemedalyat zahav
A the-victor-PL:M FUT-3:PL:M-win INST-medal-CON:SG:F gold
hem gam yekablu tiyul ħinam lenica
3:PL:M also FUT-3:PL:M-receive trip free to-Nice
'All victors will win a gold medal. They will also receive a free trip to Nice.'

b. kol menaceah yizke bemedalyat zahav
A victor-SG:M FUT-3:SG:M-win INST-medal-CON:SG:F gold
(i) *hu* gam yekabel tiyul ħinam lenica
3:SG:M also FUT-3:SG:M-receive trip free to-Nice
(ii) *hem* gam yekablu tiyul ħinam lenica
3:PL:M also FUT-3:PL:M-receive trip free to-Nice
'Every victor will win a gold medal. He/they will also receive a free trip to Nice.'

Whereas in (6a) *kol* in the plural construction licenses plural bound anaphors, in (6b) *kol* in the singular construction licenses singular bound anaphors. Similarly, whereas in (7a) *kol* in the plural construction

licenses a plural discourse anaphor, in (7b) *kol* in the singular construction may license either singular or plural bound anaphors.

Thirdly, in Hebrew as in other languages, distributivity is itself a marked semantic relation, in that, in constructions unmarked for distributivity, the preferred interpretations are generally non-distributive. Thus, for example, in sentences such as (5) above, allowing both distributive and non-distributive interpretations, the latter, non-distributive interpretations are much more readily available.

In accordance with the above, Hebrew *kol* may be characterized as a simple universal quantifier. In the unmarked case, with plural morphology, as in (4a), the resulting construction is therefore unmarked for distributivity. However, in the marked case, with singular morphology, as in (4b), the construction in question acquires a distributive-key interpretation. Whereas in (1b) universal quantification and distributive-key denotations are combined in a single portmanteau form *every*, in (4b) universal quantification and distributive-key denotations are encoded separately: the former in the simple universal quantifier *kol*, the latter in the singular morphology.[9]

Thus, Hebrew provides a further instantiation of a languages with a simple but no distributive-key universal quantifier. Alongside other languages, such as Maricopa, Zulu, Malayalam, White Hmong and Yukaghir, Hebrew accordingly provides further support for Universal 1, and, ipso facto, for the characterization of *all* and *every* as unmarked and marked forms respectively.

5. *Universal quantifiers in Arabic*

With regard to universal quantification, Arabic dialects fall into two classes, which may be labelled *conservative* and *innovative*. In the conservative dialects, universal quantification follows the same pattern as in Hebrew, as illustrated in the preceding section. The conservative dialects are so named because they inherit the expression of universal quantification from Classical Arabic. Geographically, the conservative dialects are concentrated in the east, including Iraqi (Erwin 1963:358-359), Syrian (Cowell 1964:468-469) and Lebanese (Feghali 1919:279-280); to the best of my knowledge, all the Asian dialects of Arabic belong to the conservative type. In Africa, the conservative dialects include Abbéché of Chad (Roth 1979:173-175), Cairene (Tomiche 1964:201), East Libyan (Owens 1984:87), and various Maghrebi dialects (Marçais 1977:209-211). Following are examples of universal quantification in two conservative dialects, from Asia and Africa respectively:

(8) *West Galilee, Israel*

a. kull in-naas ħimlu talat šantaat
A the-man:PL carry-PST-3:PL three suitcase-PL
'All the men carried three suitcases'

b. kull raajil ħiml talat šantaat
A man carry-PST-3:SG:M three suitcase-PL
'Every man carried three suitcases'

(9) *Northwest, Morocco*

a. kull n-nas rəfdu tlata d-l-balizaat
A the-man:PL carry-PST-3:PL three LIG-the-suitcase-PL
'All the men carried three suitcases'

b. kull ražl rfəd tlata d-l-balizaat
A man carry-PST-3:SG:M three LIG-the-suitcase-PL
'Every man carried three suitcases'

As in (4), the same lexical item, here a cognate of Classical Arabic *kull*, occurs with plural morphology in the (a) sentence, and with singular morphology in the (b) sentence. In the West Galilean Israeli dialect, in (8a) *kull* takes the definite plural head noun *in-naas* and forms an NP triggering plural verbal agreement, while in (8b) it takes the indefinite singular head noun *raajil* and forms an NP triggering singular verbal agreement. In the Northwest Moroccan dialect, in (9a) *kull* takes the definite plural head noun *n-nas* and forms an NP triggering plural verbal agreement, whereas in (9b) it occurs in construction with the singular indefinite noun *razl* and forms an NP triggering singular verbal agreement. As in (4), in both of the above examples, the universal quantifier is glossed as 'all' in the (a) sentence, but as 'every' in the (b) sentence.[10]

A rather different picture is presented by the innovative dialects. In these dialects, the construction with plural morphology has been lost, while that with singular morphology has been retained. To the best of my knowledge, these dialects occur exclusively in North Africa; at present, I am familiar with only one previous discussion of this pattern, for Maltese (Borg 1995). Following are examples of constructions corresponding to (8) and (9) in three innovative dialects of the North-African area:

(10) *Malta*

a. *Kull l-irġiel ġarrew tliet bagalji
A the-man:PL carry-PST-3:PL three suitcase-PL
'All the men carried three suitcases'

b. Kull raġel ġarr tliet bagalji
A man carry-PST-3:SG:M three suitcase-PL
'Every man carried three suitcases'

(11) *Jewish, Marrakesh, Morocco*

a. *kill n-naas rvdu tlata d-l-balizaat
A the-man:PL carry-PST-3:PL three LIG-the-suitcase-PL
'All the men carried three suitcases'

b. kill raažəl rvid tlata d-l-balizaat
A the-man carry-PST-3:SG:M three LIG-the-suitcase-PL
'Every man carried three suitcases'

(12) *Tunis, Tunisia*

a. *kul in-nas hazu tleθa faližat
A the-man:PL carry-PST-3:PL three suitcase-PL
'All the men carried three suitcases'

b. kul rajil haz tleθa faližat
A man carry-PST-3:SG:M three suitcase-PL
'Every man carried three suitcases'

Thus, in Maltese, in the Jewish dialect of Marrakesh, and in the dialect of Tunis, the universal quantifier cognate with Classical Arabic *kull* no longer occurs in construction with a plural head noun: sentences (10a)-(12a) are ungrammatical. However, in these dialects, the cognate of Classical Arabic *kull* still occurs in construction with a singular head noun, as in (10b)-(12b); moreover, as in the conservative dialects, the resulting construction is associated with a distributive-key interpretation.

Prima facie, the innovative dialects of North-African Arabic appear to present a counterexample to Universal 1. Specifically, examples (10)-(12) suggest that the cognate of Classical Arabic *kull* has evolved from a simple to a distributive-key universal quantifier. Accordingly, these dialects would seem to possess a distributive-key universal quantifier but no simple one, in violation of Universal 1. However, a closer examination of the facts reveals a rather different state of affairs.

To see this, though, let us take one last look at the conservative dialects. In addition to the constructions illustrated in (8) and (9), these dialects possess an additional construction, in which the universal quantifier cognate with Classical Arabic *kull* occurs in a postnominal, adverbial position, with an enclitic pronoun bound by its subject-NP antecedent. As in (8a) and (9a), this construction is associated with plural morphology and a simple, non-distributive interpretation. Examples of this construction are provided in (13)-(16) below:

(13) *West Galilee, Israel*

in-naas kullin ħimlu talat šantaat
the-man:PL A-3:PL carry-PST-3:PL three suitcase-PL
'All the men carried three suitcases'

(14) a. in-naas illi šuftin kullin ħimlu
the-man:PL REL see-PST-1:SG-O:3:PL A-3:PL carry-PST3:PL
talat šantaat
three suitcase-PL

b. ? in-naas kullin illi šuftin ħimlu
the-man:PL A-3:PL REL see-PST-1:SG-O:3:PL carry-PST-3:PL
talat šantaat
three suitcase-PL
'All the men that I saw carried three suitcases'

(15) *Northwest, Morocco*
n-nas kullum rəfdu tlata d-l-balizaat
the-man:PL A-3:PL carry-PST-3:PL three LIG-the-suitcase-PL
'All the men carried three suitcases'

(16) a. n-nas lli šuftum kullum rəfdu
the-man:PL REL see-PST-1:SG-O:3:PL A-3:PL carry-PST-3:PL
tlata d-l-balizaat
three LIG-the-suitcase-PL

b. *in-nas kullum lli šuftum rəfdu
the-man:PL A-3:PL REL see-PST-1:SG-O:3:PL carry-PST- 3:PL
tlata d-l-balizaat
three LIG-the-suitcase-PL
'All the men that I saw carried three suitcases'

In (13) and (15), the plural head noun *in-naas / n-nas* is followed by the universal quantifier *kullin / kullum*. In (14) and (16), a restrictive relative clause *illi šuftin / lli šuftum* is added to the subject NP. As evident in (14) and (16), in both dialects, the postnominal universal quantifier occurs after the relative clause, as in (14a) and (16a), not before it, as in (14b) and (16b). Since, in general, relative clauses in Arabic occur after all other postnominal modifiers, examples (14) and (16) suggest that the postnominal universal quantifier is not part of the subject NP but, rather, occupies an adverbial position. Clear further support for the adverbial nature of *kullin* and *kullum* is provided by the fact that these forms may occur in a variety of other positions, non-adjacent to the subject NP.[11]

Returning, now, to the innovative dialects, we find that the postnominal universal quantifier also occurs, with similar plural morphology and simple, non-distributive interpretation. Crucially, however, in each of these dialects, there is at least one construction in which the adverbial universal quantifier has undergone syntactic reanalysis and been incorporated into the NP as a postnominal modifier. Contrasting with (13)-(16) above in the conservative dialects are examples (17)-(23) below in the innovative dialects:

(17) *Malta*
L-irġiel kollha ġarrew tliet bagalji
the-man:PL A-3:SG:F carry-PST-3:PL three suitcase-PL
'All the men carried three suitcases'

(18) a. L-irġiel li rajt kollha ġarrew tliet
the-man:PL REL see-PST-1:SG A-3:SG:F carry-PST-3:PL three
bagalji
suitcase-PL

b. L-irġiel kollha li rajt ġarrew
the-man:PL A-3:SG:F REL see-PST-1:SG carry-PST-3:PL
tliet bagalji
three suitcase-PL
'All the men that I saw carried three suitcases'

(19) *Jewish, Marrakesh, Morocco*
a. n-naas killhöm rvdu tlata d-l-balizaat
the-man:PL A-3:PL carry-PST-3:PL three LIG-the-suitcase-PL

b. killhöm n-naas rvdu tlata d-l-balizaat
A-3:PL the-man:PL carry-PST-3:PL three LIG-the-suitcase-PL
'All the men carried three suitcases'

(20) a. n-naas də ret killhöm rvdu
the-man:PL REL see-PST-1:SG A-3:PL carry-PST-3:PL
tlata d-l-balizaat
three LIG-the-suitcase-PL

b. n-naas killhöm də ret rvdu
the-man:PL A-3:PL REL see-PST-1:SG carry-PST-3:PL
tlata d-l-balizaat
three LIG-the-suitcase-PL
'All the men that I saw carried three suitcases'

(21) *Tunis, Tunisia*
a. in-nas il-kul hazu tleθa faližat
the-man:PL the-A carry-PST-3:PL three suitcase PL

b. in-nas il-kulhum hazu tleθa faližat
the-man:PL the-A-3:PL carry-PST-3:PL three suitcase-PL
'All the men carried three suitcases'

(22) a. ? in-nas ili šufthum il-kul hazu
the-man:PL REL see-PST-1:SG-O:3:PL the-A carry-PST-3:PL
tleθa faližat
three suitcase-PL

b. in-nas il-kul ili šufthum hazu
the-man:PL the-A REL see-PST-1:SG-O:3:PL carry-PST-3:PL
tleθa faližat
three suitcase-PL
'All the men that I saw carried three suitcases'

(23) a. in-nas ili šufthum il-kulhum
the-man:PL REL see-PST-1:SG-O:3:PL the-A-3:PL
hazu tleθa faližat
carry-PST-3:PL three suitcase-PL

b. ? in-nas il-kulhum ili šufthum
the-man:PL the-A-3:PL REL see-PST-1:SG-O:3:PL
hazu tleθa faližat
carry-PST-3:PL three suitcase-PL
'All the men that I saw carried three suitcases'

In Maltese, the postnominal universal quantifier *kollha* contains an invariable singular feminine enclitic *-ha*, no longer referring back to the subject NP. Moreover, *kollha* may occur either after the relative clause *li rajt*, as in (18a), or before it, as in (18b) – the latter construction suggesting that the quantifier is contained within the subject NP. In the Jewish dialect of Marrakesh, the universal quantifier plus enclitic third person plural pronoun *killhöm* may occur either postnominally, as in (19a), or prenominally, as in (19b). Moreover, when occurring postnominally, it may occur either after the relative clause *də ret*, as in (20a), or before it, as in (20b). Again, in (20b) as in the prenominal (19b), the quantifier *killhöm* obviously forms part of the subject NP. Finally, in the dialect of Tunis, the universal quantifier occurs in a postnominal construction that is clearly adjectival, as evidenced by the occurrence of the proclitic definite article *il-*, which, like in most other dialects of Arabic, characteristically occurs before the head noun and each of its postnominal adjectival modifiers. Note that the universal quantifier *kul* may occur in two variants: bare, as in (21a), or with an enclitic pronoun, as in (21b); these two variants differ with respect to the strength with which they are bound to the head noun. Whereas the bare variant *il-kul* occurs preferably before the relative clause *ili šufthum*, as in (22b), the variant with the enclitic pronoun *il-kulhum* occurs preferably after the relative clause, as in (23a) – the former case providing further support for the analysis of the quantifier as internal to the NP.

Thus, as shown in (17)-(23) above, in each of the innovative dialects, there exists at least one construction in which the cognate of Classical Arabic *kull* occurs within the NP, in postnominal position, with plural morphology, and with the interpretation of a simple, non-distributive universal quantifier. Hence, even though the innovative dialects have lost the old prenominal construction with plural morphology and simple, non-distributive interpretation, they have acquired a new, NP-internal postnominal construction with similar properties: therefore, they do not provide counterexamples to Universal 1.[12]

In fact, the diachronic development of the postnominal construction

provides independent support for Universal 1. To this point, all the Arabic dialects that I have had occasion to examine uphold the following implicational generalization:

(24) If the cognate of Classical Arabic *kull* does not occur in a prenominal construction with plural morphology and simple, non-distributive interpretation, then it occurs in an NP-internal postnominal construction with plural morphology and simple, non-distributive interpretation.

Generalization (24) allows for three types of dialects, differing with regard to the available constructions with plural morphology, and simple, non-distributive interpretation, involving the cognate of Classical Arabic *kull*: (a) those with a prenominal construction but no NP-internal postnominal construction; (b) those with a prenominal construction and also an NP-internal postnominal construction; and (c) those with an NP-internal postnominal construction but no prenominal construction. Type (a) is exemplified by conservative dialects such as West Galilean Israeli and Northwest Moroccan, illustrated above. Type (b) is represented by some other conservative dialects, including Takroûna of Tunisia (Marçais and Abderrahmân 1960:3456-3469) and Djidjelli of Algeria (Marçais n.d. 472-474).[13] And Type (c) is instantiated by innovative dialects such as Maltese, the Jewish dialect of Marrakesh, and the dialect of Tunis, illustrated above.

Generalization (24), if correct, points towards the following diachronic scenario:

(25) Type (a) > Type (b) > Type (c)

The above scenario suggests that the syntactic reanalysis of a postnominal universal quantifier associated with plural morphology and simple, non-distributive interpretation, from adverbial to NP-internal, in the development from type (a) to type (b), is a necessary prerequisite for the subsequent loss of the prenominal universal quantifier also associated with plural morphology and simple, non-distributive interpretation, in the development from type (b) to type (c). Given that all Arabic dialects possess a prenominal universal quantifier with singular morphology and distributive-key interpretation, Universal 1 entails that all Arabic dialects must also possess some universal quantifier with simple, non-distributive interpretation. Thus, if a type (a) dialect were to lose its prenominal universal quantifier with plural morphology and simple, non-distributive interpretation, it would remain without a simple, non-distributive universal quantifier, and hence

in violation of Universal 1. However, in a type (b) dialect, with an NP-internal postnominal universal quantifier with plural morphology and simple, non-distributive interpretation, the old prenominal universal quantifier with plural morphology and simple, non-distributive interpretation is redundant. Therefore, it may be lost – resulting in a dialect of type (c). Accordingly, the diachronic scenario represented in (25) provides independent support for Universal 1, and, in particular, its viability as a constraint on possible paths of historical syntactic change.

In summary, then, all North-African Arabic dialects, of whatever type, may be characterized as possessing a simple universal quantifier, cognate with Classical Arabic *kull*, but no distributive-key universal quantifier. In this respect, North-African Arabic dialects resemble other languages around the world with simple but no distributive-key universal quantifiers, such as Maricopa, Zulu, Malayalam, White Hmong and Yukaghir. Moreover, in all North-African Arabic dialects, the simple universal quantifier may enter into two different constructions with its head noun, one with plural morphology and simple, non-distributive interpretation, the other with singular morphology and distributive-key interpretation. In this regard, North-African Arabic dialects resemble Hebrew and various other languages of the Mediterranean-African area.

Thus, universal quantification in the North-African dialects of Arabic provides further support for the characterization of *all* and its simple, non-distributive counterparts in other languages as unmarked, and of *every* and its distributive-key equivalents in other languages as more highly marked. In doing so, it provides additional evidence against the widespread linguistic assumption that *every* is the most prototypical of quantifiers, and the concomitant characterization of NPs containing *every* as 'essentially quantificational' – instead supporting the philosophers' insights to the effect that the basic universal quantifier is in fact *all*.

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Notes

[1] The terms 'distributive-key' and 'distributive-share' are adapted from Choe (1987). In many instances, these terms correspond to more familiar ones involving scope; specifically, the distributive-key has wide scope, the distributive-share narrow scope. However, in other cases, a relationship of distributivity may obtain where it is not customary to speak of a scope relation, as for example in (2a), where a subject NP is interpreted as distributive-key and its predicate as distributive-share.

[2] In addition to *all* and *every*, English possesses two other universal quantifiers, *each* and *any*. These quantifiers differ from *all* and *every* in the presence of a further denotational component, pertaining to anaphoricity. Specifically, *each*, in addition to being marked as distributive-key, is marked as determinate, while *any* is marked as free-choice (For discussion of the feature of anaphoricity see Gil 1991). In this paper, attention is restricted to universal quantifiers that are unmarked for anaphoricity: English *all* and *every*, and their counterparts in other languages.

[3] Most of the data in Table 1 derive from my own field work, or from that of other linguists who were kind enough to share their knowledge with me (see the Acknowledgements Section above). In three cases, however, I have relied on written sources: Latvian (Namei and Carlsson 1992), Godoberi (Tatevosov 1994) and Straits Salish (Jelinek 1995).

[4] In some such languages, alternative periphrastic strategies are available for the expression of meanings corresponding to those of a distributive-key universal quantifier. For example, in Maricopa, a distributive-share form of the numeral 'one', *šiintík* 'one-by-one' / 'one each', is used (Gil 1982). In Zulu, a conjunctive operator *na-*, variably glossed as 'even' / 'and' / locative / comitative / 'have', occurs between reduplicated demonstratives. In Malayalam, both alternative

strategies are available: a distributive-share form of the numeral 'one', *ooroo* 'one-by-one' / 'one each', and also a conjunctive operator *-um* 'also' / 'even' / 'and' / future (Gil 1993a, 1994a,b). Although forms such as these are occasionally glossed as 'every', consideration of their entire range of functions shows that they are not bona fide distributive-key universal quantifiers, but, rather, forms whose meanings, in certain specific contexts, happen to converge on those of *every* and its counterparts. Accordingly, in Gil (1991, 1995b) such forms are characterized as 'pseudo-distributive-key universal quantifiers'.

[5] Swahili *kila* and Tarifit Berber *kur* are both borrowings, from some Arabic dialect, of a form cognate with Classical Arabic *kull* – and with the various forms that constitute the topic of this paper. Turkish *her*, Lezgian *har* and Punjabi *har* are all borrowings of the Persian universal quantifier *har*.

[6] Since universal quantifiers are generally the only quantifiers to possess distinct simple and distributive-key forms, the processes deriving distributive-key universal quantifiers from their simple counterparts cannot be productive processes in their respective languages. In fact, in most of the above examples, the formal relationship between simple and distributive-key universal quantifiers is probably diachronic. Perhaps the most likely candidate for a synchronic process is the Lakhota distributive-key *iyohila*, derived from simple *iyuha* by suffixation of the diminuitive marker *-la*.

[7] Other languages exhibiting this pattern include French (Gil 1995a, to appear), Spanish (Gil 1991), Amadia Aramaic (Krotkoff 1982), and Gã (Gil 1995a, to appear). At present, I am lacking in information with regard to the extent to which this pattern occurs in sub-Saharan Africa, other than in Gã. This pattern is also well attested in antiquity, from Biblical Hebrew, Classical Aramaic (Margolis 1910:66-67) and Classical Greek (Haspelmath 1995). Interestingly, a similar pattern occurs also in English, with the free-choice universal quantifier *any* (Gil 1991).

[8] In the morpheme-by-morpheme glosses provided in this paper, the following abbreviations are used: ACC 'accusative'; CON 'construct (state)'; F 'feminine'; FUT 'future'; INF 'infinitive'; INST 'instrumental'; LIG 'ligature'; M 'masculine'; O 'object'; PL 'plural'; PRS 'present'; PRT 'participle'; PST 'past'; REL 'relativizer'; SG 'singular'; 1 'first person'; 3 'third person'. In addition, the letter A is used to denote the simple universal quantifier.

[9] Note that in (4)-(7) above, the constructions differ not only with respect to number but also with regard to (in)definiteness: whereas the plural constructions in (4a)-(7a) contain a marker of definiteness, the singular constructions in (4b)-(7b) do not contain any such marker. Nevertheless, there is ample independent evidence showing that the morphosyntactic feature responsible for the semantic contrast between the respective pairs of constructions is number, rather than (in)definiteness. Consider the following examples, contrasting the quantifier phrases *šney ___ o yoter* 'two or more' in (i/a) and *yoter me- ___ eħad* 'more than one' in (i/b):

(i) a. šney anašim o yoter sahvu šaloš mizvadot
two-M man-PL:M or more carry-PST-3:PL three-F suitcase-PL:F
'Two or more men carried three suitcases'

b. yoter meiš ehad sahav šaloš mizvadot
more than-man one-M carry-PST-3:SG:M three-F suitcase-PL:F
'More than one man carried three suitcases'

In (i/a), *šney ___ o yoter* takes plural number morphology, and, like *kol* in the plural construction, is unmarked for distributivity. However, in (i/b), *yoter me- ___ eħad* is associated with singular number morphology, and, like *kol* in the singular construction, forces a distributive interpretation. (Note that a similar contrast obtains also in the English glosses to the Hebrew constructions.)

[10] Again, as in Hebrew, the construction with plural morphology and simple, non-distributive interpretation in (8a)-(9a) differs from its counterpart with singular morphology and distributive-key interpretation in (8b)-(9b) also in the presence of the definite article. Whereas this pattern obtains for most of the conservative dialects, an interesting exception is provided by the Abbéché dialect of Chad, in which both constructions occur without the definite article, eg. *kullu näs* 'all the men', *kullu balad* 'every country' (Roth 1979:173-175). The Abbéché pattern provides further support for the claim that the morphosyntactic property underlying the semantic contrast between

the simple and distributive-key constructions is indeed number, rather than (in)definiteness (cf. the preceding note).

[11] Under an alternative analysis, *kullin* and *kullum* might be characterized as the subjects of their respective clauses, and *in-naas* and *n-nas* as their pre-clausal topics. However, this alternative analysis is belied by the observation that *kullin* and *kullum* may occur with greater freedom in a wider variety of positions than most real subject NPs. For example, in clause-final position, *kullin* and *kullum* are generally readily acceptable, whereas other subject NPs are awkward or ungrammatical. Thus, constructions such as (13)-(16) resemble other, more familiar constructions in English, often characterized as exemplifying "quantifier float".

[12] However, the new postnominal constructions in the innovative dialects do create apparent counterexamples to Universal 3. Specifically, Maltese *kollha*, Jewish Marrakesh *killhöm* and Tunis *kulhum*, with simple, non-distributive interpretations, are derived from their counterparts *kull*, *kill* and *kul*, with distributive-key interpretations, by the attachment of pronominal forms *-ha*, *-höm* and *-hum* respectively. However, as argued above, *kull*, *kill* and *kul* are not really distributive-key universal quantifiers; rather, their distributive-key interpretations derive from the singular morphology of the constructions in which they occur. Moreover, the attachment of *-ha*, *-höm* and *-hum* to *kull*, *kill* and *kul* is not a morphological process, derivational or inflectional, but rather a process of cliticization. Thus, the forms of the universal quantifiers in the innovative dialects do not constitute counterexamples to Universal 3.

[13] For example, for the Djidjelli dialect, Marçais cites both prenominal constructions with plural morphology and simple non-distributive interpretation, eg. *kĕll-ĕn-nâs* 'all the men', and NP-internal adjective-like postnominal constructions with plural morphology and simple non-distributive interpretation (similar to (21a) above), eg. *ĕd-drâri l-kĕll* 'all the children' – in addition to prenominal constructions with singular morphology and distributive-key interpretation, eg. *kĕll-sûq* 'every market'.

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