Chapter 1

From a collective to a free choice determiner in Biblical Hebrew

Edit Doron
Hebrew University of Jerusalem

The paper is a diachronic study of the Hebrew universal determiner *kol*. In Biblical Hebrew (BH), *kol* was originally a noun meaning 'entirety' which grammaticalized as a collective determiner akin to *all*. *Kol* induces maximality, like the determiner *all*, but, unlike *all*, it is not quantificational, hence its maximality does not preclude homogeneity. Semantically, *kol NP* is interpreted as the plural property corresponding to NP. In argument position, the strongest interpretation of *kol NP* results from the application of the definite type-shift (the *iota* type-shift). But within the scope of certain modals and in downward entailing environments, the indefinite type-shift (existential closure) yields a stronger interpretation. This results in the free choice (FC)/negative polarity (NPI) *any* interpretation of *kol* in these environments. In post-Biblical times, the *any* interpretation evolved into the distributive interpretation *every*. The paper thus traces the development of *kol*'s extensive meaning variation 'all/any/every'.

1 Introduction

How does universal quantification develop in a language? Haspelmath (1995) suggests that collective universal determiners (like English *all*) often originate in an adjective meaning *entire/whole*, and that distributive universal determiners (such as English *every*) have various sources – free choice (FC) determiners like *any*, or collective universal determiners like *all*. The [FC → distributive] development was elucidated by Beck (2017), and here I would like to describe the [collective → distributive] development. I claim that at least for some languages, the latter development is a cycle which includes the former, as shown in (1) below:[1]

[1]The cyclical nature of (1) is due to its reversibility (cf. van Gelderen 2011 on the pervasive nature of cyclical change). *Every* in present-day English has completed the Distributivity Cycle and is acquiring a collective interpretation, as in *Everyone gathered in the hall*, by re-entering the cycle.

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(1) collective universal determiner ⟶ FC determiner ⟶ distributive universal determiner

In (2) I add the original first step, where an Adj/Noun meaning *entire(ty)* evolves into a collective universal determiner:

(2) The Distributivity Cycle

Adj/Noun *entire(ty)* $\overset{\text{I}}{\longrightarrow}$ collective univ. det. $\overset{\text{II}}{\longrightarrow}$ FC det.

$\overset{\text{III}}{\longrightarrow}$ distributive univ. det.

I will motivate the Distributivity Cycle on the basis of the history of Hebrew. Steps I + II took place in Biblical Hebrew (BH): The BH noun *kol* 'entirety' grammaticalized as the collective determiner *all*, and did not have a distributive meaning other than as a free choice (FC)/negative polarity (NPI) determiner akin to *any*. Modern Hebrew (and probably much earlier) underwent step III, whereby FC *kol* also came to have the universal distributive meaning *every*.[2] The present analysis thus accounts for the surprising array of interpretations 'all/any/every' of *kol* in Modern Hebrew without alleging that *kol* is existential rather than universal (Bar-Lev & Margulis 2013).[3]

The structure of the paper is the following. Section 2 shows that BH should be classified as a NP (rather than a DP) language. Section 2.1 argues that BH had no definite (or indefinite) determiner. Section 2.2 demonstrates that the determiner *kol* was originally a noun – it had both the morphology and the distribution of other nouns in the language. *kol* was often found heading the pseudo-partitive construction, and accordingly underwent an independent-to-functional meaning-shift which grammaticalized it as the determiner *all*. Section 3 discusses the semantic properties of the determiner *kol*. Section 3.1 shows that it was not

[2]Hence Hebrew conforms to Haspelmath's view on the direction of development from 'any' to 'every' rather than the other way round, despite his own assessment of Hebrew as a counterexample (Haspelmath 1997:156 fn.13).

[3]The existential analysis of *kol* in Modern Hebrew was applied to the structure *kol NP* with a predicate NP. The partitive *kol DP* is undisputedly universal in Modern Hebrew, casting doubt on the existential analysis of *kol*. I return to Modern Hebrew at the end of the article, in Section 6. For now, I note that the root *kll* of *kol* (and the related roots *klkl, kwl, kly*) derive a plethora of nouns and verbs denoting completeness, containment, inclusiveness and generality. Biblical Hebrew has *kālā* 'to complete (intrans.)', *killa* 'to complete (trans.)', *kalīl* 'completely', *hēḵīl* 'to contain', *klī* 'container', *kāl* 'to measure', *kilkēl* 'to contain/sustain'. Later periods innovated *klal* 'whole', *klali* 'general', *biḵlal* 'at all', *miḵlol* 'ensemble', *tḵula* 'content', *kalal* 'to include', *kolel* 'including', *hiḵlil* 'to generalize', *haḵlala* 'generalization'. Not a single noun or verb derived from *kll* in any period of Hebrew has an existential interpretation. These factors have motivated the analysis of *kol* as universal (Doron & Mittwoch 1986, Glinert 1989, Francez & Goldring 2012, Danon 2013).

distributive – it was never interpreted as *every*. Sections 3.2 and 3.3 discuss maximality and homogeneity, and show that *kol*'s homogeneity did not result in the lack of maximality which would be expected by Križ (2016). Section 4 describes the operator *each* which was responsible for distributivity in BH. Section 5 discusses the emergence of the free choice (FC) interpretation of *kol* within the scope of certain modal operators. Section 6 briefly relates the post-Biblical development whereby the FC reading gave rise to a distributive reading. This development is not elaborated in the present paper, relying on Beck (2017). Section 7 is the conclusion.

2 Biblical Hebrew as a NP-language

Biblical Hebrew (BH) did not have a distributive universal determiner. This has been claimed for other languages as well, e.g. Salish (Jelinek 1993; Davis 2010; Davis et al. 2014; von Fintel & Matthewson 2008; Matthewson 2001; 2014). Yet BH did not just lack a distributive universal determiner, but other determiners as well. According to the typology of Bošković (2008), BH is an NP-language (in contrast to DP-languages). To derive the interpretation of NPs in argument position, BH makes use of type-shifts, in particular the *definite type-shift* (the *iota* type-shift) and the *indefinite type-shift* (existential closure). This accords with the fact that BH is a language without either a definite determiner or an indefinite determiner, and hence relies on the corresponding type-shifts instead. This is the topic of the next subsection.

2.1 The BH definite article as an inflectional prefix

As argued by Doron & Meir (2013; 2016), the Hebrew article *han-*, though glossed as *the-*, is historically not a D but a word-level inflectional prefix.[4] It does not mark definiteness – which is a phrase-level category, but *state* – which is a word-level category. The article marks nouns (and adjectives) as being in the *emphatic state*. The emphatic state alternates with the other two values of the state category: the unmarked *absolute state* and the *construct state*, which marks the noun as relational/possessee.[5] A noun in the emphatic state projects its emphaticity

[4] See Rubin (2005): 65 for the history of the article *han-*. Phonological processes delete its final /*n*/, resulting in the prefix *hā-*, or assimilate /*n*/ to the first consonant of the ensuing noun.

[5] The term *emphatic* in 'emphatic state' is a Semiticists' term, used mostly in descriptions of Aramaic, marking a particular value of the inflectional state of a noun and is unrelated both to the phonological term *emphatic* in the sense of *stressed* and to the phonetic term *emphatic* in the sense of *pharyngealized*. The *emphatic state* form of N will be glossed as 'the-N' in the examples below, and the *construct state* – as 'N(of)'.

value to containing NPs, and eventually results in its maximal NP projection being interpreted as definite, through the definite type-shift to ιx.⟦NP⟧(x).[6] In the simplest case, an unmodified emphatic N forms an emphatic NP by itself, and is interpreted as definite. For example the noun *water* in (3a) is also a maximal NP, hence its prefixation by *han-* is understood as definite: *the water*. On the other hand, the noun *water* in (3b) is not a maximal NP but part of a larger NP. Accordingly, its prefixation by *han-* marks it as emphatic, not as definite. It is its emphatic NP projection *well of water* which is interpreted as definite, not *a well of the water* but *the well of water*:[7]

(3) a. *way.yōmɛr ʔɛlōhīm yəhī rāqīaʕ bə.ṯōḵ ham-māyim*
and.said.3MS God be.JUSS.3MS sky inside the-water
'Then God said, Let there be a firmament in the midst of the water.' (Gen. 1:6)

b. *hinnē ʔānōḵī niṣṣaḇ ʕal ʕēn ham-māyim*
PRSTV I stand.PTCP.MS at well(of) the-water
'Behold, I stand by the well of water.' (Gen. 24:43)

In contrast, an absolute-state NP is unmarked for definiteness. It is typically interpreted as indefinite as in (4):

(4) *way.yēlɛḵ way.yimṣāʔ-ēhū ʔaryē b-ad-dɛrɛḵ*
and.went.3MS and.met.3MS-ACC.3MS lion.MS in-the-road
way.yəmīṯ-ēhū
and.killed.3MS-ACC.3MS
'When he was gone, a lion met him on the road and killed him.' (1Kings 13:24)

The absolute-state subject *lion* of the main clause of (4) denotes the predicate λx.lion(x). This predicate can combine with the clause's predicate λx.P(x) by predicate modification: λx.lion(x) & P(x). The truth value of the sentence is calculated by applying the indefinite type-shift (existential closure): ∃x.lion(x) & P(x).

[6] ιx.P(x) is the maximal individual satisfying P, defined both for singular and plural predicates (Sharvy 1980).

[7] Unless stated otherwise, all Biblical translations are from the New King James Version (NKJV). The pairs of allophones *b-β, g-ɣ, d-ð, k-x, p-f, t-θ,* are transcribed according to the Hebraist transcription *b-ḇ, g-ḡ, d-ḏ, k-ḵ, p-p̄, t-ṯ*. Three vowel qualities are distinguished, in accordance with the Tiberian tradition, e.g. *ā* vs. *a* vs. epenthetic *ă*.

But since an absolute-state NP is unmarked, it can on principle also be interpreted as definite. The definite interpretation is normally thwarted by the principle of *maximize presupposition* (Heim 1991), which would favour the use of an emphatic-state NP to indicate definiteness. Yet there are special cases. An absolute-state NP may be interpreted as definite when the property it denotes holds of a unique entity by virtue of its meaning. This is the case of kind-names (Doron 2003), as in (5), or NPs headed by *kol*, as in (6), to which we return in Section 3.

(5) *wə.gār zəʔēḇ ʃim kɛḇɛś… wə-ʔaryē k-ab-bāqār*
and.dwell.MOD.3MS wolf.MS with lamb.MS… and-lion.MS as-the-cattle
yōḵal tɛḇɛn
eat.MOD.3MS straw
'The wolf shall dwell with the lamb… and the lion shall eat straw like the ox.' (Isa. 11:7)

(6) *way.yōsɛp̄ ʃōḏ dāwiḏ ʔɛṯ kol bāḥūr bə-yiśrāʔēl šəlōšīm*
and.gathered.3MP again David ACC KOL(of) warrior.MS in-Israel thirty
ʔālɛp̄
thousand
'Again David gathered all the choice men of Israel, thirty thousand.' (2Sam. 6:1)

2.2 The BH pseudo-partitive construction

Pseudo-partitives, also called measure constructions, denote an amount (a particular degree of a measure function) of some substance (Selkirk 1977). In Hebrew, the substance is denoted by an indefinite NP complement of the determiner. The indefinite substance-denoting NP may be in the absolute state (as in the (a) examples below) or in the emphatic state (as in the (b) examples below) since emphaticity does not mark the substance NP but the whole construction as definite. The head of the construction is a degree N which partitions the substance into portions (Schwarzschild 2002; Ruys 2017): (7) partitions days/commandments into groups of ten, (8) and (9) partition the substance into small/large groups respectively. (10) partitions the craftsmen into groups consisting of all the craftsmen;

since there is only one such group, the absolute version in (10a) and the emphatic version in (10b) both denote a unique group:[8,9]

(7) a. *ʕăśɛrɛṯ yāmīm*
ten(of) days
'ten days' (Jer. 42:7)

b. *ʕăśɛrɛṯ had-dəḇārim*
ten(of) the-commandments
'the ten commandments' (Exod. 34:28)

(8) a. *məʕaṭ mayim*
little(of) water
'a little water' (Gen. 18:4)

b. *məʕaṭ haṣ-ṣōn hā-hēnnā*
few(of) the-sheep the-those
'those few sheep' (1Sam. 17:28)

(9) a. *rōḇ ħoḵmā*
much(of) wisdom
'much wisdom' (Eccles. 1:18)

b. *rōḇ ziḇħē-ḵɛm*
many(of) sacrifices-POSS.2MP
'the multitude of your sacrifices' (Isa. 1:11)

(10) a. *kol ħaḵmē lēḇ*
KOL(of) skilled.MP(of) heart
'all who are gifted artisans' (Ex. 28:3)

[8] Accordingly, *kol NP* is often overtly case-marked in object position by the accusative *ʔɛṯ* which marks definite direct objects, even when NP is headed by a noun in the absolute state. This was already shown in (6) above, and is shown again here in (i) and (ii):(i) *way.yōmɛr ʔɛlōhīm hinnē nāṯattī lāḵɛm ʔɛṯ kol ʕēśɛḇ zōrēaʕ zɛraʕ* and.said.3MS God PRSTV gave.1S to.2MP ACC KOL herb.MS seed.PTCP.MS seedAnd God said, See, I have given you every herb that yields seed. (Gen. 1:29)(ii) *way.yaħărīm ʔɛṯ kol nɛpɛš ʔăšɛr bah* and-destroyed.3MP ACC KOL soul.FS that in.3FSand destroyed all the people who were in it (Josh. 10:39)

[9] The BH *kol NP* is indeed a pseudo-partitive rather than a partitive construction where NP denotes an individual. Though the complement may be a name, as in *kol yiśrāʔēl* 'all Israel' (1Kings 12:20), *kol miṣrāyim* 'all Egypt' (Gen. 41:55), the name in this position never denotes an individual but a set of people, i.e. 'all Israelites', 'all Egyptians'. To express the totality of the geographic entity, the name has to be explicitly modified so as to clarify what kind of portions are being measured: *kōl ʔɛrɛṣ yiśrāʔēl* 'all the land of Israel' (1Sam. 13:19), *kol ʔɛrɛṣ miṣrāyim* 'all the land of Egypt' (Ex. 9:9).

b. *kol hā-ħăḵāmīm*
KOL(of) the-skilled.MP
'all the craftsmen' (Ex. 36:4)

3 The determiner *kol*

As just shown in (10), *kol* functions as a degree N which heads the pseudo-partitive construction; it denotes the *entirety* degree. The distribution of *kol* indicates that it originally was a noun. Indeed, traditional grammars of the Bible describe *kol* as an "abstract substantive denoting totality" (Joüon 1923: §139e). It occurs in the Bible not only in the construct-state form as in (10) above, but also in the absolute and emphatic states, as in (11) and (12) below. In these forms, *kol*'s vowel is not shortened as it often is in the construct state (cf. *kol* in 10), but is rather a long /*ō*/, as in *kōl* in (11) and (12):

(11) a. *bə-rāʕāḇ ū-ḇə-ṣāmā ū-ḇə-ʕērōm ū-ḇə-ħōsɛr kōl*
in-hunger and-in-thirst and-in-nakedness and-in-need(of) KOL
'in hunger, in thirst, in nakedness, and in need of everything' (Deut. 28:48)

b. *kī ħann-ani ʔɛlōhīm wə-ḵī yɛš lī ḵōl*
because favoured.3MS-ACC.1S God and-because EXST to.1S KOL
'for God has been generous to me and I have all I need' (Gen. 33:11)

(12) a. *hăḇēl hăḇālīm hak-kōl hāḇɛl*
futility(of) futilities the-KOL futility
'Futility of futilities, all is futility.' (MEV, Eccles. 1:2)

b. *wa-YHWH bēraḵ ʔɛṯ ʔaḇrāhām b-ak-kōl*
and-Lord blessed.3MS ACC Abraham in-the-KOL
'and the Lord had blessed Abraham in all things' (Gen. 24:1)

The nominal origin of *kol* is also evident in examples where it is still interpreted as the noun 'totality', e.g. when it heads the event-nominalization *count* in (13):

(13) *kol mispar rāšē hā-ʔāḇōṯ … ʔalp-ayim wə-šēš*
KOL(of) count(of) chiefs(of) the-officers … thousand-DUAL and-six
mēʔ-ōṯ
hundred-PL
'The total number of chief officers … was two thousand six hundred.' (2Chr. 26:12)

I reiterate that the translations of the Biblical verses are not my own, but are received translations, mostly from the New King James Version (NKJV). The translations are faithful to the meaning of each verse as a whole, but cannot be used to gauge the various nuances of the meaning of *kol* or other lexical items.

3.1 Non-distributivity of *kol*

The present subsection demonstrates that *kol NP* is not quantificational/distributive. It denotes the entirety of a (group) individual rather than quantifying over its members/parts.

The first piece of evidence for the non-quantificational nature of *kol NP* is the possibility of predicating cardinality of it, unlike the English *all NP*, of which cardinality cannot be predicated. *All NP* contrasts in this respect with definite *NP*s: *The apostles were twelve*/**All the apostles were twelve* (Dowty 1987; Winter 2002). In BH we find cardinals predicated of *kol NP*:[10]

(14) *kol han-nɛp̄ɛš lə-b̠ēṯ yaʕăqōb̠ hab-bāʔā miṣraym-ā šiḇʕīm*
KOL the-soul.FS of-house(of) Jacob the-go.PTCP.FS Egypt-ILL seventy
'All the persons of the house of Jacob who went to Egypt were seventy.' (Gen. 46:27)

Second, as shown in (15), *kol NP* does no distribute over another argument in the clause. For example, (15a) is unlike English and other languages, where the universal subject scopes in two different ways relative to the object, yielding ambiguity in *All the artisans made ten curtains*.

(15) a. *way.yaʕăśū kol ḥăk̠am lēb̠ bə-ʕōśē*
and.made.3MP KOL skilled.MS(of) heart among-do.PTCP.MP(of)
ham-məlāk̠ā … ʕɛśɛr yərīʕōṯ
the-work … ten curtains
'Then all the gifted artisans among them who worked … made ten curtains.' (Ex. 36:8) (non-distributive only)

b. *yōm la-YHWH ṣəḇāʔōṯ ʕal kol gēʔɛ wā-rām*
day to-Lord Sabaoth for KOL proud and-lofty
'The Lord Almighty has a day in store for all the proud and lofty.' (NIV, Isa. 2:12) (non-distributive only)

I am not aware of examples like (15) where *kol NP* distributes over another argument.

[10]For the sake of brevity I will henceforth mostly use the gloss KOL rather than KOL(of).

Third, even when its complement NP is singular, *kol NP* denotes the entirety of a group and functions as subject of collective predicates, unlike other languages where NP_{sing} only cooccurs with distributive *every*:

(16) a. *way.yiṯqabṣū ʔēlāw kol ʔīš māṣōq*
and.gathered.3MP to.3MS KOL man(of) distress
'And everyone who was in distress … gathered to him.' (1Sam. 22:2)

b. *way.yiqqāhălū ʔɛl ham-mɛlɛḵ šəlōmō kol ʔīš yiśrāʔēl*
and.assembled.3MP to the-king Salomon KOL man(of) Israel
'Therefore all the men of Israel assembled with King Solomon.' (1Kings 8:2)

c. *wə-ʔēlay yēʔāsp̄ū kol ħārēḏ bə-ḏiḇrē*
and-to.1S congregated.3MP KOL tremble.PTCP.3MS at-words(of)
ʔɛlōhē yiśrāʔēl
God(of) Israel
'Then everyone who trembled at the words of the God of Israel assembled to me.' (Ezra 9:4)

In other examples with NP_{sing}, *kol NP* denotes the entirety of an individual: *the whole NP/all the NP*.[11]

(17) a. *bə-ḵol lēḇ ū-ḇə-ḵol nɛp̄ɛš*
with-KOL heart and-with-KOL soul
'with all his heart and all his soul' (2Kings 23:3)

b. *kol rōš lā-ħŏlī wə-ḵol lēḇāḇ daẇwāy*
KOL head in-sickness and-KOL heart.MS faint.MS
'The whole head is sick and the whole heart faints.' (Isa 1:5)

NP may also be an absolute-state mass term:[12]

[11] These examples argue against Naudé's (2011b) account of *kol*, which consists in translating *kol* as *every* with $NP_{+count-def}$ and as *all* with $NP_{\pm count+def}$. Naudé's account is mistaken for (17). Moreover, it is incompatible with the lack of distributive interpretation of $NP_{+count-def}$ in (15) and (16): we would expect distributivity with *every*. Naudé's account ignores *kol* applied to $NP_{-count-def}$ as in (18), which Naudé claims does not exist (2011b: 418), and also ignores all examples where *kol* can be translated as neither *all* nor *every*, cf. Section 3.3 below.

[12] The nouns *gold* and *silver* are mass nouns in BH, just as they are in Modern Hebrew and in English, since they do not pluralize, and, though singular, denote space-filling substance:

(i) *ʔim yittɛn lī ḇālāq məlō ḇēṯ-ō kɛsɛp̄ wə-zāhāḇ*
if give.MOD.3MS to.1S Balak fullness(of) house-POSS.3MS silver and-gold
'If Balak gave me his house full of silver and gold …' (MEV, Num. 22:18)

(18) *wə-ḵōl kɛsɛp̄ wə-zāhāḇ ū-ḵlē nəħōšɛṯ u-ḇarzɛl qōḏɛš*
and-KOL silver.MS and-gold.MS and-vessels(of) bronze and-iron sacred.MS
hū la-YHWH
PRON.3MS to-Lord
'But all the silver and gold, and vessels of bronze and iron, are consecrated to the Lord.' (Josh. 6:19)

Fourth, verbal agreement provides additional evidence for the lack of distributivity of *kol NP*. If *kol* were distributive, we would expect *kol* NP_{sing} to strictly agree in the singular like *every* and unlike *all* (which agrees either in the plural or the singular). Yet irrespective of the number marking of NP, verbal agreement is often plural, even for singular NP. Example (19) shows plural agreement when NP is plural, as is to be expected. (20) shows the same plural agreement when NP is singular. The relevant NPs are in the absolute state in the (a) examples, and in the emphatic state in the (b) examples:

(19) a. *wə-ḵol birkayim tēlaḵnā mmayim*
and-KOL knees.FP become.MOD.3FP water
'and all knees will be weak as water' (Ezek. 21:12)

b. *kī mēṯū kol hā-ʔănāšīm ha-məḇaqšīm ʔɛṯ napš-ɛḵā*
for died.3PL KOL the-men the-seek.PTCP.MP ACC soul-POSS.2MS
'for all the men who sought your life are dead' (Ex. 4:19)

(20) a. *way.yēṣʔū kol ʔīš mēʕāl-āw*
and.left.3PL KOL man.MS from-3MS
'So everyone left.' (NET, 2Sam. 13:9)

b. *kol hā-ʔɛzrāħ bə-yiśrāʔēl yēšḇū b-as-sukkōṯ*
KOL the-native.MS in-Israel sit.MOD.3MPL in-the-booths
'All who are native Israelites shall dwell in booths.' (Lev. 23:42)

If *kol* were distributive, it would be unexpected for *kol* NP_{sing} to co-occur with V_{pl} in (20a), unless we think that Biblical subject-verb agreement is haphazard: there indeed are many other examples where *kol NP* cooccurs with V_{sing}. But in fact these are all *kol* NP_{sing}. There are no examples where *kol* NP_{pl} cooccurs with V_{sing}.[13] This agreement pattern is actually systematic under the assumption that *kol NP* is collective and may hence be marked as plural $[\text{kol NP}]_{pl}$ independently

[13] I exclude irrelevant examples such as left-conjunct agreement (Doron 2005), passive verbs, and verbs where the subject of V_{sing} is actually not *kol* NP_{pl} but a null expletive as in (i):

of the number feature of NP. Accordingly, V_{sing} only cooccurs with *kol* NP_{sing}, whereas V_{pl} cooccurs both with $[kol\ NP_{sing}]_{pl}$ and $[kol\ NP_{pl}]_{pl}$.[14]

Lastly, it is important to distinguish distributivity from what has been called *lexical distributivity* (Winter 2000), which is due to the lexical nature of the predicate. E.g. *weeping* in (21) below can only be predicated of a group by attributing it to the individual members of the group.[15] Lexical distributivity does not induce scopal ambiguity (de Vries 2017) and is not mediated by quantifiers.

(21) *wə-gam ham-mɛlɛḵ wə-ḵol ʕăḇāḏ-āw baḵū bəḵī gāḏōl*
and-also the-king and-KOL servants-POSS.3MS wept.3MP weeping big
məʔōḏ
very
'Also the king and all his servants wept very bitterly.' (2Sam. 13:36)

I conclude that *kol* is not quantificational. Rather, *kol* applies to a NP which denotes substance, mass or count, singular or plural, and yields a portion of the NP substance that consists of the entirety of those individuals whose parts satisfy NP. Hence *kol* maps a predicate P to the set of all individuals, atoms or sums, satisfying *P.[16,17]

(22) $[\![kol]\!] = \lambda P.\ \lambda x.\ {}^{*}P(x)$

In argument position, the predicate *kol NP* is given a definite interpretation as the maximal individual $\iota x.kol[\![NP]\!](x)$ satisfying it.[18]

(i) *wa.yəhī kol han-nō pīlīm b-ay-yōm ha-hū mē-ʔiš wə-ʕaḏ ʔiššā*
was.3MS KOL the-fall.PTCP.MP in-the-day the-that of-man and-including woman
šənēm.ʕāśār ʔālɛp̄
twelve thousand
'So it was that all who fell that day, both men and women, were twelve thousand' (Josh. 8:25)

[14] Under Naudé's (2011b) account, the agreement pattern remains mysterious.

[15] Lexical distributivity can be averted by the use of collective adverbs such as *together*, e.g.

(i) *yaħaḏ ʕālay yiṭlaħăšū kol śōnəʔ-āy*
together at.1S whisper.MOD.3MP KOL hate.PTCP.MP-POSS.1S
'All who hate me whisper together against me' (Ps. 41:8)

[16] *P denotes the minimal divisive predicate (Krifka 1989) which includes P: if P is itself divisive, i.e. plural or mass, then *P=P; otherwise *P is the pluralized version of P.

[17] I assume that the absolute/emphatic *kōl* in (11)/(12) above combines with a null P which spans the entire relevant domain.

[18] In a downward entailing environment, the definite interpretation is disfavoured, as it is weaker than the indefinite (existential closure) interpretation. We return to this below in Section 3.3.

3.2 Maximality of *kol*

We have seen that *kol* does not contribute distributivity. So what does it contribute? Why say 'all the men' rather than simply 'the men', if it is not for the purpose of allowing distributivity?

The answer seems to be that *kol NP* denotes the sum of *all* parts of NP, including absolutely all of them (Brisson 1997; 2003). This is illustrated by the following example, which demonstrates that tearing away the kingdom is compatible with not tearing away all the kingdom:

(23) *qārōaʃ ʔɛqraʃ ʔɛṯ ham-mamlāḵā mē-ʕālɛḵā ... raq ʔɛṯ kol*
tear.INF tear.MOD.1S ACC the-kingdom from-over.2MS ... but ACC KOL
ham-mamlāḵā lō ʔɛqraʃ – šēḇɛṭ ʔɛḥāḏ ʔɛtēn
the-kingdom NEG tear.MOD.1S – tribe.MS one.MS give.MOD.1S
li-ḇn-ɛḵā
to-son-POSS.2MS
'I will surely tear the kingdom away from you ... However, I will not tear away the whole kingdom; I will give one tribe to your son.' (1Kings 11:13)

kol disallows the slack allowed by *the*$_{pl}$ (Krifka 2006; Lasersohn 1999; Schwarz 2013). Lasersohn characterizes *slack* as pragmatic looseness which involves approximation to the truth that does not affect truth conditions. When speaking loosely, the speaker takes it to be unlikely that the (possible) difference between the actual world and his assertion is relevant for present purposes. To adapt an example of Lauer (2012), *I live in Tel-Aviv* is true in a context where the speaker lives in Jaffa, which abuts Tel-Aviv, but is not part of it. Various expressions, such as *proper*, are seen as *slack regulators* in this respect. *I live in Tel-Aviv proper* cannot be used with slack: it is never appropriate if the speaker lives in Jaffa.

The plural definite *the*$_{pl}$ displays pragmatic slack: it makes a sentence such as *The boys smiled* true even if there are some exceptions, assuming those exceptions do not matter for present purposes. The role of *all*, on this view, is that of a slack regulator. It disallows the flexibility permitted by the plural definite *the*$_{pl}$. This view integrates what Dowty (1987) called the 'maximizing effect' of *all*. *All the boys smiled* is interpreted maximally.

Winter (2001) attributes the maximality of *all* to its being quantificational. Winter shows that (24a) but not (24b) is entailed by (25):

(24) a. The members of the organizing committee met.
b. All the members of the organizing committee met.

(25) The organizing committee met.

(24a) has a reading equivalent to (25). Under this reading the denotation of the definite *the members of the organizing committee* is mapped to a group individual representing the committee itself. Such a process is impossible in (24b), where the only way to achieve collectivity is to use quantification which requires every committee member in (24b) to participate in the meeting.

In BH, the maximality of *kol* is not due to quantification over individuals, since *kol* is not quantificational. Rather, the maximality of *kol* is a consequence of measurement as expressed by the pseudo-partitive construction. Measuring an individual requires taking into account its full extent, preventing non-maximality.[19]

3.3 Homogeneity of *kol*

In dictionaries and traditional grammars of Biblical Hebrew, *kol* is translated as *all* (sometimes as *every*, mistakenly in my view). But in addition, these sources mention that in combination with negation, *kol* is interpreted as *none at all* (rather than *not all*). Hence, it seems to exhibit what has been called *polarity* (Löbner 2000) or *homogeneity* (recently Križ 2016), which is surprising, since this phenomenon is said to be incompatible with the maximality of *all* (Križ 2016 argues that maximality is the by-product of lack of homogeneity).

3.3.1 The puzzle

Homogeneity is a property of plural predication which requires that a plurality not be mixed with respect to the property predicated of it (or its negation). For (26a) below to be true, the subject must have reacted to all the external stimuli. For (26b) to be true, the subject must have reacted to none of the external stimuli. In mixed scenarios, where the subject reacted to some but not all of the stimuli,

[19] I therefore beg to differ from one passage in the medieval Rabbinic exegetical literature (Assaf 1929: 245), where the maximality of *kol* is disputed, and it is argued that *kol* only gives rise to an existential commitment. The problem is the apparent contradiction between two verses in Chapter 9 of the book of Exodus, the first describing the extinction of all Egyptian livestock by the plague, and the second – Moses' subsequent words to the Pharaoh, which presuppose that not all the livestock had perished.

(i) *way.yāmāṯ kōl miqnē miṣrāyim*
and.died KOL livestock(of) Egypt
'And all the livestock of Egypt died.' (Ex. 9:6)

(ii) *wə-ʃattā šəlaḥ hāʕēz ʔɛṯ miqnə-ḵā*
and-now send gather ACC livestock-POSS.2MS
'Send now and gather your livestock.' (Ex. 9:19)

neither (26a) nor (26b) is true. These scenarios are what Križ calls an "extension gap", where (26a) and (26b) are neither true nor false:

(26) a. The subject reacted to the external stimuli.
b. The subject did not react to the external stimuli.

Homogeneity is also found with measure phrases, as in the following English examples from the web.

(27) a. I didn't add the glass of chardonnay. (i.e. I didn't add any of it)
b. It said it had friction modifier already in it so I didn't add the bottle of motorcraft modifier.

Homogeneity disappears in English in the presence of *all*. In (28), if the subject reacted to some but not all of the stimuli, (28a) is simply false and (28b) is true.

(28) a. The subject reacted to all the external stimuli.
b. The subject did not react to all the external stimuli.

It is therefore surprising that in BH, sentences with *kol* do exhibit homogeneity. In BH, negating a sentence with *kol* does not yield 'not all' but 'none at all', i.e. 'not any'.

(29) a. *wə-ḵōl śīaḥ haś-śāḏɛ ṭɛrɛm yihəyɛ ḇ-ā-ʔāreṣ wə-ḵōl*
and-KOL plant(of) the-field still.not be.MOD.3MS in-the-earth and-KOL
ʃēśɛḇ haś-śāḏɛ ṭɛrɛm yiṣmāḥ
herb(of) the-field still.not grow.MOD.3MS
'before any plant of the field was in the earth and before any herb of the field had grown' (Gen. 2:5)
≠ 'before all plants of the field were in the earth and before all herbs of the field had grown'

b. *kol ʔăšɛr lō yāḏəʃū ʔēṯ kol milḥămoṯ kənāʃan*
KOL that NEG knew.3MP ACC KOL wars(of) Canaan
'all who had not experienced any of the wars in Canaan' (Judg. 3:1)
≠ 'all who had not experienced all of the wars in Canaan'

c. *lō təḇaʃărū ʔēš bə-ḵōl mōšḇōṯ-ēḵɛm bə-yōm*
NEG kindle.MOD.2MP fire in-KOL dwellings-POSS.2MP on-day(of)
haš-šabbāṯ
the-Sabbath
'You shall kindle no fire throughout your dwellings on the Sabbath day. ' (Ex. 35:3)
≠ 'You shall not kindle fire throughout all your dwellings.'

There is a well-known dialogue in the story of the Garden of Eden, where the snake queries Eve as in (30). Her answer starts by denying that she and Adam had been forbidden from eating any of the fruit of the garden, thus indicating that she interprets the snake's use of *kol* as involving homogeneity:[20]

(30) *ʔap̄ kī ʔāmar ʔɛlōhīm lō tōk̲lū mik-kōl ʕēṣ*
indeed indeed said.3MS God NEG eat.MOD.2MP from-KOL tree(of)
hag-gān
the-garden
'Has God indeed said "You shall not eat of any tree of the garden?"' (MEV, Gen. 3:1)

According to Križ (2016), maximality derives from lack of homogeneity, whereas here we see that the maximality of *kol* is compatible with its homogeneity. A parallel puzzle in English is mentioned by Križ (2016: 515), where maximality does not depend on lack of homogeneity. His example is of definite plurals with numerals. These plurals are homogeneous in English, but are only interpreted maximally, e.g. *The six professors smiled* requires all of them to have smiled. Interestingly, the syntax of such plurals in BH parallels that of *kol NP*. Both have the structure *N(of) NP* where N functions as a degree determiner and NP is indefinite irrespective of its emphatic marking (as emphaticity marks the whole construction as definite rather than the complement NP):

(31) a. *šēšɛt̪ yəmē ham-maʕăśɛ*
six(of) days(of) the-work
'the six working days' (Ez. 46:1)

b. *kōl yəmē ħayy-āw*
KOL(of) days(of) life.PL-POSS.3MS
'all the days of his life' (1Sam. 7:15)

The structure in (31) is that of the pseudo-partitive discussed above in Section 2.2. In English too, definite plurals with numerals are not interpreted like other definite plurals. A definite plural does not presuppose anything beyond existence; in particular it does not presuppose uniqueness. A definite plural with the numeral *six* presupposes contextual uniqueness of a group individual with the measure *six*. The phrase *the six working days* is interpreted as the unique individual in the context of a week which has measure *six* out of the substance

[20] Other translators, for example the NKJV, consider *kol* here to be focused, and hence translate 'Has God indeed said, "You shall not eat of *every* tree of the garden"?'.

working days. Accordingly, the English *the six working days* is a pseudo-partitive, i.e. a measure phrase, just like the BH (31a). The denotation of the relevant degree is given in (32), where #x denotes the number of atoms that the individual x consists of.

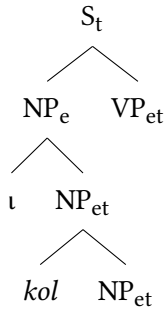
(32) $[\![\check{s}\bar{e}\check{s}\varepsilon\underline{t}]\!] = \lambda P.\ \lambda x.\ ^{*}P(x)\ \&\ \#x = 6$

As in the case of *kol*, measurement is what guarantees maximality despite homogeneity, both in Hebrew and in English. Unlike the case of *kol*, $\iota x.[\![\check{s}\bar{e}\check{s}\varepsilon\underline{t}\ NP]\!](x)$ is not necessarily defined (unless the cardinality of NP is 6).[21]

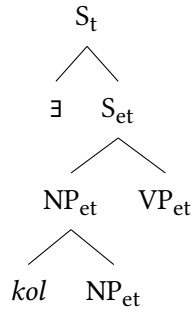
3.3.2 An account of homogeneity

As was shown in Section 3.1, *kol NP* is a predicate, hence there are two ways of combining it with the sentence predicate VP which is of the same type. One way, represented in (33a), is to type-shift *kol NP* to type *e* by applying the definite type-shift. The other way, represented in (33b), involves combining *kol NP* with VP via predicate modification, followed by the application of the indefinite type-shift (existential closure).

(33) a.



b.



In general, the stronger interpretation is the definite interpretation in (33a). But in a downward entailing environment, e.g. negation, (33b) is stronger. If no

[21] When the complement NP of the numeral is in the absolute state, the measure phrase is interpreted as indefinite. Moshavi & Rothstein (2018) attribute the "durational measuring phrase" interpretation of such phrases, e.g. (i) below, to indefiniteness. Yet definite measure phrases are also attested, such as (31a).

(i) *šēšɛ̱t yāmīn taʕăḇōḏ u-ḇ-ay-yōm haš-šəḇīʕī tišbōṯ*
six(of) days work.MOD.2MS and-in-the-day the-seventh rest.MOD.2MS
'Do your work in six days and rest on the seventh day.' (CEV; Exod. 34:21)

element of NP satisfies VP, then neither does the maximal element. But if the maximal element of NP does not satisfy VP, this does not entail that no element of NP does.

The two type shifts available for the derivation of a sentence with *kol NP*, coupled with the *stronger meaning hypothesis*: Pick the stronger meaning (Dalrymple et al. 1994), predict the following:[22]

(34) a. Definite type-shift (33a) in non-downward-entailing environments
b. Indefinite type-shift (33b) in downward-entailing environments

Indeed the indefinite type-shift is attested in downward entailing environments, including, besides negation, other downward entailing environments as well. Indefinite type-shifted *kol NP* can thus be interpreted as a negative polarity item (NPI).[23]

(35) negation

a. *wə-ʔēn kol ħāḏāš taħaṯ haš-šāmɛš*
and-NEG KOL new under the-sun
'And there isn't anything new under the sun.' (Eccles. 1:9)
≠ 'Not all new things are under the sun.'

b. *lō yirʔɛ kol ħaḵmē lēḇ*
NEG see.MOD.3MS KOL skilled.MP(of) heart
'He shows no partiality to any who are wise of heart.' (Job 37:24)
≠ 'He shows no partiality to all who are wise of heart.'

c. *wə-lō māṣəʔū ḵol ʔanšē ħayil yəḏē-hɛm*
and-NEG found.3MP KOL men(of) might hands-POSS.3MP
'And none of the mighty men have found the use of their hands.' (Ps. 76:5)
≠ 'And not all the mighty men have found the use of their hands.'

[22]The analysis follows Krifka (1996) (also Malamud 2012; Spector 2018), where plural referential expressions are interpreted as universal/existential on the basis of the stronger meaning hypothesis.

[23]Raising *kol NP* out of the downward-entailing environment and interpreting it by the definite type-shift (33a) does not yield the right truth conditions in the question example in (38), and is impossible in (41) because of the island nature of the conditional protasis. Hence there is no way of forgoing the indefinite type-shift (33b).

(36) generic NP

a. *nɛp̄ɛš ʔăšɛr tiggaʕ bə-k̲ol dāḇār ṭāmē … wə-hū ṭāmē*
soul.FS that touch.MOD.3FS at-KOL thing unclean … and-he unclean
wə-ʔāšēm
and-guilty
'a person who touches any unclean thing… he shall be unclean and guilty' (NET, Lev. 5:2)
≠ 'a person who touches all unclean things… he shall be unclean and guilty'

b. *ʔārūr šōk̲ēḇ ʕim kol bəhēmā*
cursed.MS lie.PTCP.MS with KOL animal
'Cursed is the one who lies with any kind of animal.' (Deut 27: 21)
≠ 'Cursed is the one who lies with all the kinds of animals.'

(37) FC NP
kol nɛp̄ɛš ʔăšɛr tōk̲al kol dām wə.nik̲rəṯā han-nɛp̄ɛš
KOL soul.FS that eat.MOD.3FS KOL blood and.will.be.cut.off.3FS the-soul.FS
ha-hī mē-ʕamm-ɛhā
the-that.FS from-people-POSS.3FS
'Whoever eats any blood – that person will be cut off from his people.' (Lev. 7:27)
≠ 'Whoever eats all the blood – that person will be cut off from his people.'

(38) question
hinnē ʔănī YHWH ʔɛlōhē kol bāśār – hā-mimɛnni
PRSTV I Lord God(of) KOL flesh – Q-from.1S
yippālē kol dāḇār
be.beyond.ability.MOD.3MS KOL thing
'Behold, I am the Lord... Is there anything too hard for Me?' (Jer. 32:27)
≠ 'Are all things too hard for Me?'

(39) complement of adversative verbs
wə-šōmēr yāḏ-ō mē-ʕăśōṯ kol rāʕ
and-keep.PTCP.3MS hand-POSS.3MS from-do.INF KOL evil
'… and keeps his hand from doing any evil ' (Isa. 56:2)
≠ '… and keeps his hand from doing all evil things'

(40) *before*-PPs
ʕōḏ-ɛnnū ḇə-ʔibb-ō lō yiqqāṭēp wə-lip̄nē ḵol ħāṣīr
still-3MS in-green-POSS.3MS NEG cut.MOD.3MS and-before KOL plant
yīḇāš
wither.MOD.3MS
'While it is yet green and not cut down,it withers before any other plant.' (Job 8:12)
≠ 'While it is yet green and not cut down,it withers before all other plants.'

(41) conditional protasis

a. *ʔim yiggaʕ ṭəmē nɛpɛš bə-kol ʔēllɛ*
if touch.MOD.3MS unclean(of) dead.body at-KOL these
ha-yiṭmā
Q-be.unclean.MOD.3MS
'If one who is unclean touches any of these, will it be unclean?' (Hag. 2:13)
≠ 'If one who is unclean touches all of these, will it all be unclean?'

b. *kī yištaħū l-aš-šɛmɛš ʔō l-ay-yārēaħ ʔō lə-kol ṣḇā*
if worship.MOD.3MS to-the-sun or to-the-moon or to-KOL host(of)
haš-šāmayīm …
the-heavens …
'If [he] worships the sun or moon or any of the host of heaven …' (Deut. 17:3)
≠ 'If [he] worships the sun or moon or all the host of heaven …'

(42) comparative PPs
wat.tērɛḇ maśʔaṭ binyāmin mim-maśʔōṯ kull-ām
and.was.as.large.3FS serving.FS(of) Benjamin as-servings(of) all-3MP
ħāmēš yāḏōṯ
five portions
'but Benjamin's serving was five times as much as any of theirs' (Gen. 43:34)
≠ ? but Benjamin's serving was five times as much as all of theirs'

4 Distributivity in BH

In English, *all* is quantificational, and may be interpreted distributively. As shown above, *kol* is a non-quantificational degree determiner in BH, and is not distributive. Distributivity is achieved in BH by other means. Various BH syntactic structures express distributivity through the LF application of the operator *each* (defined by Link 1987) to a property:

(43) $[\![\text{each}]\!] = \lambda P.\lambda x.\forall y \leq x\ [\text{Atom}(y) \longrightarrow P(y)]$

We only expect the distributivity operator to modify VPs predicated of a subject *kol NP* if the latter is derived by the definite type shift (33a). Such *kol NP* denotes an individual, for which the ≤ part-of relation is defined. We indeed do not find the distributivity operator when *kol* is interpreted as *any*, by the application of the indefinite type shift (33b).

4.1 The lexical item *ʔīš* 'each'

In the simplest case, the distributivity operator is expressed by a VP-premodifier, the lexical item *ʔīš* 'each' (literally 'man'), sometimes reduplicated as in (45):

(44) a. *way.yaggīšū kol hā-ʕām ʔīš šōr-ō*
and.brought.3MP KOL the-people.MS each OX-POSS.3MS
'So every one of the people brought his ox.' (1Sam. 14:34)

b. *kī kol hā-ʕammim yēlḵū ʔīš bə-šēm ʔɛlōh-āw*
for KOL the-peoples walk.MOD.3MP each in-name(of) God-POSS.3MS
wa-ʔănaħnū nēlēḵ bə-šēm YHWH ʔɛlōh-ēnū
and-we walk.MOD.1P in-name(of) Lord God-POSS.1P
'For all people walk each in the name of his God, but we will walk in the name of the Lord our God.' (Mic. 4:5)

(45) *way.yāḇōʔū kol ha-ħăḵāmīm… ʔīš ʔīš mim-məlaḵt-ō ʔăšɛr*
and.came.3MP KOL the-experts… each each from-work- POSS.3MS
hēmmā ʕōśīm
that they do.PTCP.MP
'Then all the craftsmen … came each from the work he was doing.' (EX. 36:4)

4.2 Reduplication

The distributivity operator can also be expressed by reduplicative adverbials, as shown by Beck & von Stechow (2006), Naudé & Miller-Naudé (2015):

(46) a. *way-yittənū ʔēlāw kol nəṣīʔē-hɛm maṭṭɛ lə-nāṣī*
and-give.MOD.3MP to.3MS KOL leaders-POSS.3MP rod for-leader
ʔɛḥāḏ maṭṭɛ lə-nāṣī ʔɛḥāḏ
one rod for-leader one
'and each of their leaders gave him a rod apiece' (Num. 17:21)

b. *qəḥū lāḵɛm min hā-ʕām šənēm.ʕāśār ʔănāšīm ʔīš*
take.IMPR.2MP to.2MP from the-people twelve men man
ʔɛḥāḏ ʔīš ʔɛḥāḏ miš-šāḇɛṭ
one man one from-tribe
'Take for yourselves twelve men from the people, one man from every tribe' (Josh. 4:2)

c. *middē šānā bə-šānā*
whenever year in-year
'year after year' (1Sam. 7:16)

d. *bə-ḵol dōr wā-ḏōr*
in-KOL generation and-generation
'forever and ever ' (Ps. 45:17)

e. *wə.sāpəḏū … kol ham-mišpāḥōṯ han-nišʔārōṯ mišpāḥōṯ*
mourn.MOD.3MP KOL the-families the-remain.PTCP.MP families
mišpāḥōṯ ləḇāḏ
families alone
'all the families that remain shall mourn, every family by itself' (Zech. 12:14)

4.3 Floated *kol*

Another VP-premodifier which is interpreted as *each* is the inflected *kol*.[24] In (47a), the subject is null and the predicate is modified by *kullām*, i.e. *kol* inflected in the plural. In (47b) the subject is a group individual, and the predicate is again modified by *kullām*.

[24]This modification has been called "quantifier float" by Shlonsky (1991) and Naudé (2011a).

(47) a. *kull-ām lə-dark-ām pānū*
KOL-POSS.3PL to-way-POSS.3MP turned.3PL
'They all look to their own way.' (Isa. 56:11)

b. *wə-kol ṣāray-iḵ kull-ām b-aš-šəḇī*
and-KOL adversaries-POSS.2FS KOL-POSS.3PL in-the-captivity
yēlēḵū
go.MOD.3MP
'And all your adversaries, every one of them, shall go into captivity. ' (Jer. 30:16)

kol may also be inflected in the singular, e.g. *ḵullō* in (48):

(48) *ʔɛp̄ɛs qāṣē-hū ṯirʔɛ wə-ḵull-ō lō*
edge(of) extremity-POSS.3MS see.MOD.2MS and-KOL-POSS.3MS NEG
ṯirʔɛ
see.MOD.2MS
'You shall see the outer part of them [the nation], and shall not see every one of them.' (Num. 23:13)

4.4 Dependent relational nouns

Relational nouns denoting e.g. body-parts, kinship and socially defined roles, or other relations which involve atomic individuals rather than groups, give rise to distributive interpretations when they depend on group nouns. Examples are shown in (49). Each example includes a dependent relational noun, where the dependence is marked by POSS inflection, as in (49a–b), by the presence of a possessor which raises in LF to yield inverse scope readings, as in (49c–d), or by the presence of an implicit possessor, as in (49e–f):

(49) a. *kol šōməʕ-ō təṣillɛnā štē*
KOL hear.PTCP.MS-POSS.3MS tingle.MOD.3FP both.FP(of)
ʔozən-āw
ear.FP-POSS.3MS
'Both ears of everyone who hears it will tingle.' (1Sam. 3:11)

b. *kol hā-ʔănāšīm hay-yōḏəʕīm kī məqaṭṭərōṯ nəšē-hɛm*
KOL the-men the-know.PTCP.MP that fume.PTCP.FP wives-POSS.3MP
lē-ʔlōhīm ʔăḥērīm
to-gods other.MP
'all the men who knew that their wives had burned incense to other gods' (Jer. 44:15)

c. *ū-ḇə-lēḇ kol ħăḵam lēḇ nāṭattī ħoḵmā*
and-in-heart(of) KOL skilled.MS(of) heart have.put.1S wisdom
'I have put wisdom in the hearts of all the gifted artisans.' (Ex. 31:6)

d. *ū-mik-kol hā-ħay mik-kol bāśār šənayīm mik-kol*
and-of-KOL the-live.PTCP.MS of-KOL-flesh two of-KOL
tāḇī ʔɛl hat-tēḇā
bring.MOD.2MS to the-ark
'And of every living thing of all flesh you shall bring two of every sort into the ark.' (Gen. 6:19)

e. *kī kull-ō ħānēp̄ ū-mēraʃ wə-ḵol pɛ*
because KOL-3MS godless and-evildoing and-KOL mouth
dōḇēr nəḇālā
speak.PTCP.MS vileness
'for the whole of it [of the nation] was godless and evildoing, every mouth was speaking vile words' (NET, Isa. 9:17)

f. *ħārū yōšəḇē ʔɛrɛṣ … suggar kol bayiṭ*
burned.3MP inhabitants(of) earth … shut.up.3MS KOL house
mib-bō
from-come.INF
'the inhabitants of the earth are burned … every house is shut up so that no one may go in' (Isa. 24:10)

The dependence of the relational noun on a group individual gives rise to the introduction of the distributivity operator at the predicate level (Winter 2000). The LFs of (49a–f) can be represented as (50a–f) respectively. The predicate abstracted from the clause which contains the bound x_i is distributively predicated of the group subject:

(50) a. [[all who hear it] [each$_i$ [both ears of x_i will tingle]]]
b. [[all men] [each$_i$ [x_i knew that x_i's wife had burned incense to other gods]]]
c. [[all gifted artisans] [each$_i$ [I have put wisdom in the heart of x_i]]]
d. [[all kinds] [each$_i$ [bring two of x_i into the ark]]]
e. […[all of the nation] …] [each$_i$ [the mouth (of x_i) was speaking vile words]]
f. […[the inhabitants] …] [each$_i$ [the house (of x_i) is shut up so that no one enter it]]

5 Free choice

Existential modals such as *may* give rise to what has been called *the distribution requirement* by Kratzer & Shimoyama (2002). This requirement results in a free choice (FC) reading of particular expressions under existential modals.[25] We find the same reading for *kol NP* in Hebrew. Under an existential modal, *kol NP* receives a FC reading, as in the following examples, where *kol NP* is satisfied by different individuals in different accessible worlds:

(51) a. *wa.ʔăḵaltɛm ʔōṯ-ō bə-ḵol māqōm ʔattɛm ū-ḇēṯ-əḵɛm*
and.eat.MOD.2MP ACC-it in-KOL place you.MP and-house-POSS.2MP
'You may eat it in any place, you and your households.' (Num. 18:31)

b. *wə-ħēlɛḇ nəḇēlā … yēʕāśɛ lə-ḵol məlāḵā wə-ʔāḵōl*
and-fat(of) animal … be.used.MOD.3MS to-KOL craft and-eat.INF
lō ṯōḵəlu-hū
NEG eat.MOD.2MP-ACC.3MS
'And the fat of an animal … may be used in any other way; but you shall by no means eat it.' (Lev. 7:24)

The FC reading is also available in the scope of imperative/commissive modal operators (cf. Dayal 2013) if *kol NP* is modified by a relative clause, as in (52) below. In such examples, *kol* is interpreted as *whatever/whoever* and receives a FC interpretation:

(52) a. *kol hab-bēn hay-yilōḏ ha-yəʔōr-ā tašlīḵu-hū*
KOL the-son the-born.PTCP.MS the-river-ILL cast.MOD.2MP-ACC.3MS
'Every son who is born you shall cast into the river.' (Ex. 1:22)

b. *kol makkē yeḇūsī b-ā-rīšōnā yihəyɛ lə-rōš*
KOL attack.PTCP.MS Jebusite in-the-first be.MOD.3MS to-chief
ū-lə-śar
and-to-captain
'Whoever attacks the Jebusites first shall be chief and captain.' (1Chron. 11:6)

A minimal pair is shown in (53), where *kol+relative clause* has a FC interpretation in the commissive (53a), but merely a collective interpretation in the episodic (53b):

[25] According to Bar-Lev & Fox (2017), ◇(p ∨ q) excludes ◇(p & q) by exhaustivity, but includes ◇p & ◇q by innocent inclusion, hence implies FC.

(53) a. *wə-ḵōl ʔăšɛr tōmar ʔēlay ʔɛʕɛśɛ*
and-KOL that say.MOD.2MS to.1S do.MOD.1S
'and I will do whatever you say to me' (Num. 22:17)

b. *way.yaʕaś kōl ʔăšɛr ʔāmār*
and.did.3MS KOL that said.3MS
'so [Moses] did all that he had said' (Ex. 18:24)

FC readings have been accounted for by the pervasive view (from Kadmon & Landman 1993 to Chierchia 2013) that FC items are existential.[26] In the case of *kol*, the FC interpretation is due to the indefinite type-shift in (51b) above. Under the present approach, the availability of this type-shift depends on its deriving a stronger reading than the competing definite type-shift. This indeed seems to be the case. If John or Mary may sign a check, then each of them may. But if John and Mary may sign the check, it is not clear they may each sign separately.[27]

I assume that the FC interpretation was eventually reanalyzed as part of the lexical meaning of *kol*. The change conforms to Eckardt's (2006: 236) notion of semantic reanalysis – the overall sentence meaning did not change, but there was redistribution of conceptual content: *kol* acquired FC interpretation in the environment of certain modal operators.

6 Beyond step II

In Modern Hebrew (MH), we find that step III of the Distributivity Cycle has occurrred (perhaps as early as Rabbinic Hebrew). The universal determiner *kol* is now interpreted as the distributive *every* in addition to its categorization as *any*:

(54) *kol* NP = *every/any* NP_{et}

I will not discuss step III in the present paper, and rely on Beck's (2017) account of the development from FC to distributive interpretations. Beck shows how conjunction of the alternative propositions which underlies FC readings develops into universal quantification over individuals.

Moreover, in post-Biblical Hebrew, definite noun phrases are not NPs but are all headed by D; as shown by Doron & Meir (2016), the article *ha-* was reanalyzed as a definite determiner of category D. Accordingly, when the complement of *kol* is definite, it is categorized as an individual DP rather than a predicate NP:

[26] Menéndez-Benito (2010) and Zimmermann (2008) treat FC items as universal, but this crucially depends on the distributive interpretation of the universal determiner, which *kol* does not have.

[27] In general, $\Diamond P(a \vee b) \rightarrow \Diamond P(a) \,\&\, \Diamond P(b)$, but $\Diamond P(a \oplus b) \not\rightarrow \Diamond P(a) \,\&\, \Diamond P(b)$.

(55) *kol* DP = all DP_e

The construction in (55) is definite due to its partitive structure. There isn't any longer an indefinite type-shift giving rise to NPI/FC interpretations, not even in downward entailing or modal environments, as shown in (56). (56) contrasts with parallel Biblical examples such as (29–30) or (41–42) above, which have a pseudo-partitive structure, and hence have NPI/FC interpretations.

(56) a. *ha-hanhala lo hitħayḇa le-qabel et kol ha-tlunot*
the-administration NEG commited to-accept ACC KOL the-complaints
The administration did not commit to accept all/*any complaints.

b. *ha-hanhala hitħayḇa le-qabel et kol ha-tlunot*
the-administration commited to-accept ACC KOL the-complaints
The administration commited to accept all/*any complaints.

However, in construction (54), we do find NPI/FC interpretations, as shown in (57):

(57) a. *ha-hanhala lo hitħayḇa le-qabel kol tluna*
the-administration NEG commited to-accept KOL complaint
'The administration did not commit to accept every/any complaint.'

b. *ha-hanhala hitħayḇa le-qabel kol tluna*
the-administration commited to-accept KOL complaint
'The administration commited to accept every/any complaint.'

The Biblical origins of the *any NP* construction in (54) are also manifested by the number feature of *any*'s complement within this construction. It is only within this construction that the complement of *kol* can be a plural NP in MH, just like in the Biblical (19a), (35b–c). The following are MH examples found on the web:

(58) a. *lo nimce'u kol tlunot mucdaqot*
NEG found KOL complaint.FP justified.FP
'There weren't any justified complaints found.'

b. *anu mitħayḇim le-facot etḵem begin kol nezaqim*
we commit to-compensate you for KOL damage.MP
še-yaħulu aleyḵem
that-occur.3MP on.you
'We commit to compensate you for any damages incurred to you.'

We thus find remnants of Biblical syntax within the MH (54) construction where *kol* is interpreted as *any*, alongside the new *every* interpretation derived from it. The original definite interpretation of *kol* as *all* is now restricted to the partitive (55) structure. This completes the account of the full array of *kol*'s interpretations in MH.

7 Conclusion

Hebrew originally lacked a distributive determiner *every*. Distributivity was achieved in Biblical Hebrew through operators applying to the sentence predicate, such as the distributivity operator *each*. Step I of the Distributivity Cycle consisted in the noun *kol* 'entirety' grammaticalizing as the collective determiner *all*. The determiner was not quantificational – its combination with a NP yielded the plural property corresponding to NP. In argument position, it was interpreted either by the definite or the indefinite type-shift, depending on which yielded a stronger reading. This gave rise to step II, where *kol* received NPI/FC interpretations in particular environments. It is only at step III that *kol* acquired a distributive interpretation. Modern Hebrew *kol* also retained its previous uses, which accounts for the extensive variation in its interpretations: 'all/any/every'. The paper has shown how these interpretations unfolded along the Distributivity Cycle.

Abbreviations

ACC	Accusative case
DUAL	Dual number
EXST	Existential copula
F	Feminine
ILL	Illative case
IMPR	Imperative
INF	Infinitive
JUSS	Jussive
M	Masculine
MOD	Modal
NEG	Negation
P	Plural
POSS	Possessive case
PRON	Pronominal copula
PRSTV	Presentative
PTCP	Participle
Q	Question particle
S	Singular
SUPR	superlative

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