

From Old English to Middle English: Universal Quantifiers

Sigrid Beck, Universität Tübingen

This talk investigates universal quantification in Middle English. While quantification in Old English (OE) has received some attention recently from a formal semantic perspective, the subsequent period of Middle English (ME) has not yet seen a formal analysis. The talk investigates what changed from OE to ME, and how to analyse (universal) quantification in ME in two different stages, early ME and late ME.

The descriptive literature on ME, e.g. Kahlas-Tarkka (1987), shows that nominal universal quantification in ME was predominantly effected by words originating from OE *ælc* 'each', such as *euch*, *illc*, *ech* etc., as well as combinations of *æfre* 'ever' and *ælc*, such as *euerech*, *æuric*, *eueri* etc. It is also clear from Kahlas-Tarkka's work on OE that significant changes took place in between OE and ME, with ME losing many of the expressions of universal quantification from OE (e.g. *æghwa*, *æghwilc*, *gehwa*, and (largely) *gehwilc*, all of which could mean 'every(one)'). Her work, however, does not illuminate the interpretive development of the expressions concerned in formal semantic terms.

A recent compositional analysis in Beck (2020) argues that the **OE quantificational system** is based on an alternative semantics. In the tradition of Kratzer & Shimoyama (2002), an indeterminate pronoun ('who', 'what') is identified as an alternative denoting expression at the heart of the OE quantifiers (e.g. *æghwa*=a+ge+'who'). A c-commanding operator quantifies over the alternatives introduced by the pronoun. The analysis captures the fact that OE words like *æghwa* 'everyone' can participate in FCI and NPI readings as well as universal interpretations, and that words like *gehwa* 'everyone/someone' can in addition be interpreted as existential quantifiers. (1) and (2) provide OE examples (from Beck (2020); FCI uses omitted for reasons of space), and (3) illustrates the analysis of a universal interpretation.

- (1) a. & suelc mon se ðet lond hebbe **eghwylce** **Sunnandege**
 and such man that this land has each Sunday
 XX gesuflra hlafa to ðare cirican for Ealdredes saule & for Ealhburge.
 twenty 'gesufl' loaves to the church for Ealdred's soul and for Ealburg's
 (codocu1,Ch_1195_[HarmD_5]:9.75) (universal)
 'And whoever has this land [is to give] twenty 'gesufl' loaves to the Church, **every Sunday**, for the souls of Ealdred and Ealburg.' (Harmer V p. 44)
- b. And a. a. a. to worulde buton **æghwilcum ende** Amen
 and ever ever ever to world without A-GE-which end Amen
 'And ever, to time without end.' ('...without **any end**...')
 (Ælfred's Boethius, Sedgefield 1899, p149 (final prayer)) (NPI)
- (2) a. Swa þonne her fram þære arleasan ðeode, hwæðere rihte
 so then here from that impious people though just
 Godes dome, **neh ceastra gehwylce** & land
 God's judgement near (of) cities every (pl) and land
 forheregeode wæron.
 wasted were (cobede,Bede_1:12.52.27.487) (universal)
 'So then here **almost every city** and district was wasted by this impious people, though it was by the just judgment of God.' (Miller)
- b. & brohte of his weorce **gehwylce** grene &
 and brought of his work GE-which green and
 wel stincende wyrta.

- good smelling herbs
(cogregdC,GDPref_and_3_[C]:1.181.16.2225) (existential)
'and brought from his work **some** green and pleasantly smelling herbs.'
- c. Ne heold he no þa Eastran, swa swa sume men
neg held he not the easter so as some men
wenað, mid Iudeum on feowertynenihtne monan
think with Jews on fourteenth moon
gehwylce dæge on wucan, ac a symle on
GE-which day in week but ever always on
Sunnandæge fram feowertynenihtum monan oð twentigesnihtne,
Sunday from fourteenth moon up to twentieth night
for þam geleafan þære Dryhtenlican æriste, ...
for the belief (of) the lordly resurrection, ...
(cobede,Bede_3:14.206.27.2104) (NPI)
'He did not keep Easter, as some imagine, in agreement with the Jews, on the
fourteenth night of the moon on **any day** of the week, but always on Sunday, from
the fourteenth night of the moon up to the twentieth night, from belief in our
Lord's resurrection, ...' (Miller)
- (3) a. indeterminate pronoun: $[[a\text{-}ge\text{-}hwa]]_{Alt} = \{x: x \in D\}$
b. alternative propositions: $[[a\text{-}ge\text{-}hwa\text{ left}]]_{Alt} = \{\lambda w.x\text{ left}_w \mid x \in D\}$
c. operator: $[[ALL\ XP]]_o(w) = 1$ iff for all $p \in [[XP]]_{Alt}$: $p(w) = 1$
d. $[[ALL [a\text{-}ge\text{-}hwa\text{ left}]]_o(w) = 1$ iff for all $p \in \{\lambda w.x\text{ left}_w \mid x \in D\}$: $p(w) = 1$
iff for all x : x left in w

The observations from Kahlas-Tarkka raise the question of **what changes during the ME period**, both empirically and analytically. The talk presents a corpus study of ME quantificational pronouns based on data collection from the PPCME (Kroch & Taylor (2000); details on the study will be presented in the talk). The study assembled a body of data representing the interpretive possibilities of the descendants of OE quantifiers. This data set is compared to the findings for OE in Beck (2020); an analysis of ME (universal) quantification is developed plus an understanding of the change from OE to ME.

The study found important differences for early ME as compared to late ME. In **early ME** (roughly, 1150-1250), expressions going back to OE *ælc* (e.g. *euch*, *illc*) and (rarely) *gehwilc* (e.g. *iwillc*) as well as complex quantifiers (e.g. *eauer euch*) allow interpretations as universals, FCI and NPI, cf. (4). At the same time, no existential interpretations of the descendants of *gehwilc* were found, and the OE *ge*-quantifiers seem to no longer systematically exist. In **late ME** (1420-1500), a reduction in forms to roughly *ech* and *eueri* goes hand in hand with further interpretive reduction: only universal interpretations were found in the corpus. (5) illustrates.

- (4) a. **& illc** **an** **king** oppnede þær Hiss hord off hise maddmess,
& each one king opened there his store of his treasure
(CMORM,I,224.1854) (universal)
'and **each king** opened there his store of his treasure'
- b. ah buten **euch** **fearlac** bitahte al hire feht in
but without any fear entrusted all her fight in
hire helendes hont
her healer's hand (CMKATHE,28.150) (NPI)

