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*Ferdinand von Mengden*

# CARDINAL NUMERALS

OLD ENGLISH FROM A  
CROSS-LINGUISTIC PERSPECTIVE

TOPICS IN  
ENGLISH LINGUISTICS

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# Cardinal als

Old English from a Cross-Linguistic Perspective

*by*

Ferdinand von Mengden



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Ferdinand von Mengden  
Berlin, November 2009

# Abbreviations

## General

<i>DOE</i>	<i>Dictionary of Old English</i>	NP	noun phrase
fn.	footnote	NUM	cardinal numeral
L	Limit number of a numeral system	OE	Old English
MEAS	unit of measurement	<i>OEC</i>	<i>Old English Corpus</i>
<i>MED</i>	<i>Middle English Dictionary</i>	<i>OED</i>	<i>Oxford English Dictionary</i>
ms.	manuscript(s)	PDE	Present-day English
n.	note	PIE	proto-Indo-European
		VP	verb phrase

## Key to morpheme-by-morpheme glosses

In Chapter I, the morpheme-to-morpheme glosses are usually employed to indicate the underlying arithmetical operations of complex numerals. In order to avoid confusion between the morpheme boundary marker “-” and the arithmetical operator “=”, morpheme boundaries are marked only in the Old English original, but not in the gloss. In Chapters II and III, morpheme boundaries will be marked, according to the convention, in both the original and the gloss. Generally the morpheme-to-morpheme glosses follow the conventions suggested by the Leipzig Glossing Rules.

1	first person	INF	infinitive
2	second person	INS	instrumental
3	third person	M	masculine
ACC	accusative	N	neuter
C	common gender form	NEG	negation
CIRC	circumfix	NMLS	nominaliser
CLF	classifier	NOM	nominative
DAT	dative	OBL	oblique case
DEM	demonstrative pronoun	ORD	ordinal numeral
DET	determiner	PL	plural
DU	dual	PPRN	personal pronoun
F	feminine	PREP	preposition
GEN	genitive	PRS	present tense
IND	indicative	PST	past tense

PTCP	participle	SG	singular
REL	relative	SBJV	subjunctive
RPRN	reflexive pronoun		

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## Introduction

Cardinal numerals are not missing in any grammar or textbook of Old English nor in numerous other contributions to the study of the language. Yet, the relevant sections in the handbooks are all short and, it seems, numerals and their system have rarely been examined with closer scrutiny. In this respect, a reference grammar of Old English does not differ much from one of any other language. The scarce attention these expressions seem to receive from grammarians or linguists does not correspond with their frequency in the every-day use of a language.

This discrepancy can perhaps be accounted for by the fact that the semantics of cardinal numerals seem quite plain and their use rather natural. As speakers, we probably count or quantify things several times a day without thinking about the mechanisms underlying these activities. Also, from a cross-linguistic perspective, no other class of lexemes is semantically as uniform as that of cardinal numerals. The notion of 'number' is independent of the cultural diversity amongst language communities and hence universal. In contrast to any other class of expressions, even to kinship or colour terms, a cardinal numeral always has a one-to-one equivalent in another language. The meaning of a cardinal numeral does not require much explanation in second language teaching and the skills of translators are hardly ever challenged by it. Perhaps the perception of the numerals and the numeral system of one's own language as an every-day phenomenon, along with the intuition that the semantics of numerals are quite evident, make it appear rather trivial to the (historical) grammarian to take a closer look at the numeral system of a language.

Knowing how to count is a capacity which is obviously located on a different level of human comprehension than understanding a Case system or a Tense system. But just as a Case system cannot be reduced to the distinction of agent and patient or a Tense system to the notions 'past' and 'present', we may well ask for a precise definition of the relation between every-day activities or processes like counting or employing numbers and their linguistic instantiations. This in turn leads us to the question of whether there is a connection between some of the grammatical properties particular to cardinal numerals and the domain of counting and calculating.

In the same way as many linguists try to account for linguistic phenomena by (alleged or proven) patterns of human cognition, we may well ask whether a non-linguistic phenomenon (or rather, a model about it) contributes to approaching a linguistic phenomenon. So, if numerals obviously have to do with

numbers, a very basic question can be employed as a plausible way of entering into the study of numerals: what is (a) number? Being faced with this question, we see that employing a concept ubiquitous in our every-day lives does not necessarily mean that we can *explain* the concept right away. A possible approach to defining ‘number’ – one of which I think it is most beneficial for studying linguistic numerals – will be presented in § 1.2 and will provide a basis for most issues discussed in this study. Several follow-up questions immediately arise from the question about the status of ‘numbers’. What is the relation between ‘numbers’ and ‘numerals’? We will see that numerals are best explained as instantiations of numbers, that is, as a set of tools that we employ if we wish to use numbers for specifying the size of a set. We will see, furthermore, that numerals can only be used in this function if they are elements of a *numeral system*. That is, one single numeral can only perform its function if it is organised around a larger set of other numerals. The expression *four* could not denote the property of ‘containing four elements’ if the same language did not also provide neighbouring expressions like *three* or *five*; cf. § 1.2.2). Thus numerals necessarily constitute a numeral system. But how exactly do we define a numeral system? We know that the notion of a ‘decimal system’ has something to do with the fact that, in many numeral systems, ‘10’ marks something like a turning point. Intuitively, we might say that ‘10’ is the first number to employ two digits and its first power, ‘100’, the first to employ three. This is true only for our written numerals, the Hindu-Arabic symbols that we use for writing numbers, but it is *not* true for any linguistic numeral system: in English, the expression *ten* follows *nine*, but both expressions consist of only one symbol (or of only one morpheme, for that matter). When speaking, we do not say something like *one-zero*. Likewise, and differing from the written symbol ⟨100⟩, the expression *hundred* is a morphologically simple expression and does not contain several digits. Thus linguistic numeral systems are different in some respect and yet they are used for the very same purpose as, say, the Hindu-Arabic notation. (Cf. particularly § 1.3.4.3, where this point will be discussed.)

Of course, it is not the task of a linguist or a grammarian to explain numbers or mathematics. Yet, if we wish to approach this class of expressions as a linguistic phenomenon, the question of what exactly the relation between a ‘(cardinal) numeral’, a ‘number’ and the size of a set (‘cardinality’) is will have to be raised. This is irrespective of the fact that, as speakers, we use numerals with ease and quite successfully yet never reflect on what exactly we are doing when we *quantify a set* and, moreover, how we are doing this or by means of which method. This complex of questions will be addressed in Chapter I. It will be shown that clarifying some basics about the status of ‘numbers’

will bring about a promising basis for understanding many features of numerals – features which have so far led linguists to conceive of numerals as a hybrid class that can be defined semantically but not morphosyntactically. Addressing fundamental questions about quantification by numbers will enable us to define a numeral system as a particular subsystem of a language (with, as we may view it, an internal grammar) and to describe the fundamental characteristics of numeral systems of natural languages. Understanding some general features of linguistic numeral systems will, in turn, help us to account for language-specific peculiarities of numerals.

Whereas numerals seem to be approachable more easily with respect to their semantics, difficulties seem to arise if we try to examine cardinal numerals in other domains of linguistic description. With respect to their inflection and their syntactic behaviour, cardinal numerals seem to display the most heterogeneous features. For instance, not only from a cross-linguistic point of view but even within a particular language, some cardinal numerals often follow different inflectional patterns than others; cf. e.g. GREENBERG (2000). With respect to their syntactic properties, cardinal numerals are similarly held to behave inconsistently both across languages and within a given language. They seem to be inscrutable to linguists at times, for instance when it comes to assigning them to a particular word class. The statement that higher valued numerals universally show more noun-like properties than lower valued numerals (CORBETT 1978a, 1978b; cf. § V.2.3) is one of the most frequently quoted generalisations on numerals. But a closer look will reveal that this implicational statement expresses a mere chance coincidence between the numerical value and the morphosyntactic features of an expression. Given that languages, and hence numeral systems of genetically unrelated languages, develop independently, I believe that formulating the implication as such should only be the first step. It should be equally essential to take the consequential second step, which is to find the reason for the apparent connection between the numerical value and the presence or absence of noun-like morphosyntactic features in the use of the respective numeral expression.

Accordingly, one question we will have to raise is that of *why* higher valued numerals *seem* more noun-like than other numerals. The explanations I will propose (particularly in Chapter V) will be based on the assumption that the more noun-like appearance of higher numerals can be accounted for by properties that are inherently characteristic of numerals (rather than of nouns). I will argue that significant clues to get to the bottom of the problem may be found in the natural way in which numeral systems emerge and, subsequently, develop into a more complex system (cf. §§ II.7 and V.2.5.1). The fact that

this development, to a considerable extent, runs parallel among genetically unrelated languages – and, accordingly, the resulting properties of numerals show parallels across languages – is, in turn, due to the universally uniform semantic content of cardinal numerals. Thus one general claim of this study is that the difficulties with respect to the morphosyntactic properties of numerals and, as a related question, to the word class character of numerals can be overcome.

Hence, the study of the processes that lead to such correlations is equally significant to finding implicational generalisations on numerals in natural languages. And, if we want to learn more about the attested (or reconstructable) long-term changes of numeral systems, cross-linguistic breadth and historical depth will be equally important. While deliberately taking both the dimensions of typology and history into consideration, this study is based on and focuses on historical data of one particular language. One of the advantages of this approach is that both a language-specific description (Old English) can be carried out and, on this basis, a long-term perspective (from proto-Indo-European via Old English to Present-day English) can at least be sketched to a sufficient degree. In addition to contributing to the study of the Old English language, a comprehensive language-specific description of a numeral system also serves the purpose of assessing the theoretical model set up in Chapter I. Long-term diachronic considerations – here with a necessary bias towards Indo-European and Germanic – provide evidence for the individual steps in the emergence and the growth of numeral systems (outlined in §§ II.7 and V.2.5.1; cf. also VON MENGDEN 2008), which in turn explains not only the variation in the morphosyntactic properties of numerals (see above), but also the general structure of numeral systems and the existence of such morphemes like *-teen* and *-ty* in Present-day English (cf. §§ I.5.3.2, II.4.3, II.7.2, and Chapter V).

The Old English language is, in various respects, a perfect candidate for the task of describing a numeral system so that more general, cross-linguistic implications can be made. Generally, Old English is a typical representative of both European and Indo-European languages. Its grammar reflects an intermediate stage between the inflecting Indo-European proto-language and the analytic character of Present-day English. Moreover, of any Early Medieval language of Europe – with the exception of Medieval Latin – Old English has by far the greatest corpus of preserved text documents comprising various genres over a period of several centuries. Finally, and most importantly with respect to numerals, the numeral system of Old English is basically similar to that of other European and Indo-European languages but at the same time shows a number of features which significantly deviate from what we are fa-

miliar with from the perspective of today's English. It is surprising, therefore, that Old English numerals have been neglected in the general linguistic literature on numerals and, likewise, that numerals are a rather neglected category in the study of Old English.

To give an example of a typologically highly unusual feature of the Old English numeral system: the Anglo-Saxons have an expression for '100' in their language just like any other European language. When counting above '100', however, they do not use it in the first place, but continue to count with multiples of '10', as if we said, 'eighty', 'ninety', 'ten-ty', 'eleven-ty', 'twelve-ty'. Only from '130' onwards do they employ the base '100' and continue with 'hundred and thirty', 'hundred and forty' and so on (cf. § II.4.3.3). This phenomenon of overrunning a numerical base has been mentioned in some typological studies on numerals with reference to other languages (GREENBERG 1978: 271, referring to Keres; COMRIE 1999: 732, mentioning Polabian), but the same phenomenon in Old English, although stable and well-attested, has gone completely unnoticed in studies on numerals and numeral systems with a cross-linguistic approach.

On the other hand, scholars interested in the study of the ancient Germanic languages have made numerous attempts to explain the etymologies of the respective expressions used for counting up to '120' (cf., e.g., SZEMERÉNYI 1960; BAMMESBERGER 1986), but there has never been any attempt to discuss the phenomenon of the Germanic languages in a more general, cross-linguistic context. Indeed, language-specific contributions concerned with these Germanic numerals seem to have completely ignored what typologists say about similar phenomena in other languages. The peculiar way in which the counting-sequence of the Anglo-Saxons is structured between '99' and '129' may serve as one example out of several for the way in which researchers of Germanic or Old English and general linguists have analysed corresponding phenomena completely independently of each other.

The grammatical description of Old English has freed itself from traditional approaches influenced by the description of the classical languages only rather recently with the emergence of electronic corpora. Yet much of what we find on numerals of either Old English or the ancient Germanic languages draws, to a large degree, on the framework of classical grammar. Neogrammarian studies on cardinal numerals have, in the tradition of their time, always focused on their phonology and morphology and on the history of particular numerals. Linguists from that earlier period examined the etymologies of numerals (e.g. VAN HELTEN 1905/06) or they provided lists of instances of particular forms and uses of numerals (e.g. FRICKE 1886). But even more recent studies hardly went any further. The very comprehensive contribution by



ROSS/BERNS (1992) provides a useful overview of the developments of all diatopic and diachronic varieties of the Germanic branch of Indo-European, but their study still focuses primarily on etymological problems, whereas they treat other linguistic aspects, the use of inflection or syntactic constructions for instance, only in the context of the history of particular numeral forms.

Yet if we set such a language-specific analysis into a cross-linguistic context, i.e. if, in our description of the numerals of one particular language, we take into account the possible strategies which can be employed for the formation of numeral expressions, we will not only operate on a safer theoretical basis, but we will also be able to gain valuable insights for the reconstruction of pre-historic stages of languages and their respective numeral systems. In my view, this context has been widely ignored in diachronic studies on numerals. I would argue, however, that an understanding of cross-linguistic features of both numeral expressions and numeral systems is in many respects a prerequisite for the historical study of numerals. Eugenio LUJÁN – one of the few historical linguists working on numerals who includes both system and reconstruction (or both typology and history) as equally important – writes (LUJÁN 1999: 203):

Traditionally, etymological work on Indo-European numerals lacked general scope, in the sense that it used to deal with each numeral separately, without taking into account what happens to be the most important characteristic of numeral systems: the fact that “the value of each cardinal number corresponds to its order in counting”, as Stampe (1977: 596) stated it. In other words, in order to account for a numeral system we have to bear in mind that the concept of “series” (or “sequence”, as Hurford (1987: 86 ff.), prefers to refer to it) is basic. It is in this sense that most of the work done on Indo-European numerals is insufficient. When concentrating on just one numeral, a given etymology may seem to be possible and the reasoning that has led to it, convincing. The problem is that, when we try to bring together the etymologies proposed for different numerals, in most cases we have to accept that the Indo-Europeans amused themselves by inventing a numeral system with no consistency at all, or else – which is more likely – we begin to suspect that the etymologies are not so convincing as we thought.

While arguing that the study of the history and pre-history of a given language requires the study of what is typologically possible and what is unlikely, I do not intend to say that the study of diachronic developments in language (or in