# How to disclaim precision about numbers 

Frans Plank (Universität Konstanz)

1. (NUM) APPROX means 'not much/many more than nor much less/many fewer than the quantity denoted by the numeral (with the speaker not vouching for any particular precise number of those within the relevant range),
2. Numerals are lexical items (free or perhaps also bound), which (i) denote numbers, exclusively, primarily, or perhaps also secondarily (with primary denotations being, e.g., hands, feet, or other body parts); which (ii) can be used for counting (used on their own) and for quantifying (in construction with (numeral classifiers plus) items denoting whatever permits of quantification); and which (iii) form a word-class (fully or partly) grammatically distinct from other word-classes (determiner, quantifier, adjective, adverb, noun, verb), or perhaps also a distinct subclass of a more comprehensive word-class.

## 3. Neither lexical nor grammatical means for NUM APPROX

## 4. Special approximate amount expressions other than numerals and without

 accompanying numeral: PAUCAL, MULTALEnglish mULT many/much, lots of, tons of, heaps of, a load of, countless, ... PAUC (a) few/little, some, several, a couple-of, a handful, ...

## 5. Precise numerals culturally designated as also having approximate meaning;

 prime candidates:(i) "round" numbers, especially higher ones
("round" numbers are "complete" numbers, ones where a counting cycle has come full circle, e.g. a round dozen, within a duodecimal frame-of-reference, otherwise tens and hundreds and thousands);
(ii) any arbitrary (?) numbers (for whatever reasons) attributed a symbolic value.

## 6. Special approximate numerals

(i) they are derived from parts of existing precise (high, round) numerals,
(ii) represent mathematical formalism, or
(iii) are borrowed (being precise numerals in the donor language, though designated for approximate meaning).

English ump-teen (ump < ?; OEtD, umpty = signaller's slang for 'dash' used in reading morse code messages; by association with numerals in -ty used for an indefinite fairly large number; whence umpteen after numerals in -teen)
myriad (< Greek 10,000, via Latin)
German zig (regular suffix of complex numerals for tens),
$x$ [iks] (i.e., the third last letter of the alphabet)
zig NOUN, zigmal, zigfach, zigtausend, zum zigsten Mal

- i.e. a numeral of exactly the same kind as numerals for tens in -zig, non-inflecting, thus differing from low numerals

Myriade(n)
Schock '60', but also 'Menge, Haufen', MHG schoc 'Haufen'
Hungarian kis-millió
small-million
'too many' (derogative)
Tagalog indefinite numerals, consisting of a repeated utterance of certain of the elements used in the formation of complex cardinal numbers;
can be used interchangeably to indicate a large number
daan-daan 'hundreds' (daan = times one hundred)
libu-libo 'thousands' (libo $=$ times one thousand $)$
angaw-angaw 'millions' (angaw $=$ times one million!)
milyon-milyon 'millions' (less common)
(Schachter \& Otanes 1972: 214)
Udihe tume 'ten hundred, thousand, very many', borrowed from Turkic tuman

## 7. Grammatical forms and constructions dedicated to just numerical approximation

## 7.1. dedicated approximative words

German circa NUM: borrowed unchanged from Latin (circā 'around', also used for approximation in the donor language, < local neighbourhood, an adnumeral derived from a prep) plus minus NUM: technical terms for mathematical operations of addition and subtraction, formally a compound
Dutch drie à vier; circa

Italian all'incirca
Qiang NUM-CLASS-(H)a:n 'about, approximately, more or less NUM' the "modifier/quantifier"(H) $a: n$ is apparently dedicated;

| Georgian | svid+i-ode gogo-s |
| :---: | :---: |
|  | seven+NOM-APPROX girl-DAT |
|  | as-i-ode |
|  | 100-NOM-up.to (bound as seen in as-i-ode-m 100-i-up.to-ERG) |
| Udihe | za:-mba 'ana |
|  | ten-APPROX boats |
| Meithei | mENa-rom |
|  | five-APPROX |

### 7.2.1. bound to words in construction with numeral

Bavarian

$$
\begin{aligned}
& \begin{array}{l}
\text { (a) Stuck-ar(a) fümf(e) } \\
\text { um-ara fümfe } \quad \text { ein Stück einer fünf? 'a piece a five' } \\
\text { cf. reciprocal adverbs: um-anand, um-ara-nand (generally: disorder, } \\
\text { perhaps indefiniteness; thus, not dedicated) }
\end{array}
\end{aligned}
$$

7.3. dedicated approximative constructions (with no specially APPROX overt markers)
7.3.1. syndetic disjunction of two (or perhaps more) neighbouring (round) numerals looks like ordinary disjunctive coordination, but is subject to special constraints, as opposed to ordinary disjunction, presumably universal:
(a) lower before higher numeral, irreversible order
three or four, *four or three
(b) if more than two numerals: disjunctive connective not omissible two or three or four, *two, three, or four

### 7.3.2. postposed disjunct numeral <br> English a book or two <br> cf. one or two books, two or three books, twenty or thirty books *one book or two, *two books or three, *twenty books or thirty cf . for precise readings of numerals: <br> Have you read one book or two? *Have you read a book or two? without an overt first numeral: <br> within the next hour or two, the last night or two, the patient or two <br> Italian tre polli o quattro

7.3.3. asyndetic juxtaposition of two neighbouring numerals (=syntactic combination), with combination perhaps so tight as to be a case of compounding (even lexicalisation); rationale: not really giving alternatives (as if a disjunctive connective 'or' were omitted, being non-omissible in other constructions), but an (abbreviated) enumeration of those numbers falling within the admissible numerical range

| German | drei vier |
| :--- | :--- |
|  | fünf ZEHN 'something between 5 and 10' |
|  | (cf. FÜNFzehn 'fifteen', compound stress rule) |
| Dutch | drie vier |
| English | *three four |
|  | but historically possible, continuing in dialects and in Scottish and |
|  | American English |
| Dhivehi | de-tin 'two-three' |
| Sinhala | de-tun 'two-three', |
| Hungarian | háróm vagy négy |
|  | three or four <br> háróm-négy |
|  | three-four, a compound? |
|  | bir iki 'one two', 'a few' |

iki üç ev 'two three house'
be s alt tane 'five six piece'
üç beş kuruş 'three five penny', meaning 'three or four' (dört '4')
[esp. with money]
bes on 'five ten'
Georgian daaxloeb-it sam-i an otx-i çicila çaikca
approximation-with three-NOM or four-NOM chicken escaped
daaxloeb-it sam-i-otx-i çicila çaikca
approximation-with three-NOM-four-NOM chicken escaped a compound, with NOM - $i$ a connecting vowel, as seen when the whole is in a different case:
sam-i-otx-ma biç-ma
three-i-four-ERG boy-ERG
with higher round numerals this $-i$ seems omissible
Vietnamese mothai
one two, ten fifteen
Motlav François pc
Hoava karu(a)kahike 'two or three'
ka-rua 2 , hike $3 ; k(a)$ - is a numeral prefix, lexical with 1 and 2 , and added to the other numerals when used in NPs;

Supyire people two three, five six
Basque? bizpahiru 'APPROX two or three'(bi 2,hiru(r) 3)
hiruzpalau 'APPROX three or four' (hiru(r) 3, lau 4)
("collocations" also possible for other numerals; -zpa- is not a conjunctive or disjunctive connector; but what else? $-z$ instrumental case, indefinite?)

Korean native numerals, not possible with Sino-Korean numerals

| handul | 'one or two' | hana + twul |
| :--- | :--- | :--- |
| tuset (tue) | 'two or three' | twul + seys |
| senet (sene) | 'three or four' | seys + neys |
| tat | 'four or five' | neys + tases |
| netetat | 'four, five or six' | tases + ? |
| yenilkop | 'six or seven' | yeses + ilkop |
| iryetel | 'seven or eight' | ilkop $+\operatorname{yetel}(p)$ |


| yetahop | 'eight or nine' | yetel $(p)+$ ahop |
| :--- | :--- | :--- |
| yenamen, yeramen 'nine or ten', 'about ten', | yel 'ten' |  |
|  | 'ten or a little more' |  |
|  | (cf. amu, amo 'someone, something') |  |

### 7.3.4. reduplication/repetition of a numeral

is probably common to produce APPROX forms of certain high round numerals; formally similar to simple juxtaposition of different numerals, but would rarely seem to be dedicated to expressing numerical approximation

Fongbe dégbà 'four thousand'
дégbà dégbà 'thousands’
àfàt 00 'h 'one thousand' (from 200-3800 built on 200-base)

### 7.3.5. reordering of numeral relative to head noun

Russian and other East Slavonic

| NUM N (=precise) | N NUM (=APPROX) |
| :--- | :--- |
| pjat' knig | knig pjat' |
| five books | books five |
|  | 'some five books' |
| za pjat' knig | za knig pjat' |
|  | knig za pjat' |

for five books
Bavarian a Stuck-a(-ra) fümf Kinda
[a piece-PL(-APPROX) five] children
fümf Kinda
(precisely) five children
8. (at least incipiently) grammatical forms which are multi/macro-functional, one function being numerical approximation

## 8.1. general purpose approximation, regardless of historical source of expression

English approximately $X$ derived adverb; basic term an adjective, or also a verb (but no grammaticalizing/lexicalizing changes)

German etwa $X$ a complex local indefinite-interrogative pronoun,
forming part of a whole paradigm, has been rendered opaque and isolated (etwa < MHG ëte-wār 'wherever', with its second part distinct from wo 'where'; compare ëte-werr 'whoever', ëte-wan 'whenever', ëte-was 'whatever', with only the latter surviving) not dedicated: etwa in der Mitte 'about in the middle', etwa in Leipzig 'perhaps in Leipzig'
ungefähr $X \quad$ a prepositional phrase disclaiming ill will and dishonesty, should a number prove not entirely accurate (< epistemic), underwent univerbation as an adverb, with its original component parts no longer transparent
< MHG āne gevarr(d)e 'without ill will'
not dedicated: Er sagte ungefähr folgendes; ungefähr dort 'he said APPROX the following; APPROX there'

Hungarian nagyjából 'by and large’
Georgian 'with nearness'

## 8.2. approximation in space: local neighbourhood

English in the region of, close to NUM
Hungarian körül-belül 'around-within'
Italian circa, all'incirca - but formally in fact dedicated to approximation (also 'concerning'), no longer literal meaning 'around'

### 8.2.1. adnumerals (ex-local adpositions or adverbs)

morphosyntax: a specifically ad-numeral kind of modifier, grammaticalized from adpositions/adverbs in construction with entire noun phrase (Plank 2004)
semantics: local or also temporal neighbourhood, 'in the region of'; two (or three?) variations on this theme of "region":
(a) around a centre, with boundaries unspecified;
(b) in a space (interval) with (perhaps somewhat indeterminate)
boundaries around (or at beginning/bottom and/or at end top, when traversed);
(c) region identified through a landmark (not necessarily in the centre).

English (a) about, around
(b) between LOWER NUM and/to HIGHER NUM


### 8.2.2. movement: coming from or going to

Chinese wu` shí lái suì
50 ? come years
'about 50 years old'

### 8.2.3. movement: vertical, up/down

Turkish üç asag̀̀ bes yukarı
3 down 5 up
'a little more or less'
is an adverbial; this only works for 3 and 5

### 8.2.4. local/directional case marking

Dhivehi dative case of the nominal form of the ordinal numeral, up to 60 : ha-ekk-as six-NMN-DAT 'up to a six' (= APPROX six)

## 8.3. temporal neighbourhood, simultaneity, future

Nama 'be' + FUTURE five full-ten FUT COP person-3PL.MASC PAST 'there were approximately 5000 men'

## 8.4. thematic aboutness (approximation to a topic/subject matter)

English about

## 8.5. approximation and notions other than (based on) spatial

### 8.5.1. speaker disclaiming knowledge and/or responsibility

8.5.1.1. epistemic adjective or adverb: certainty (lower limit), uncertainty
German bestimmt/sicher/wohl//vielleicht NUM
Dutch $\quad$ drie of misschien vier kippen
Rhaeto-Romance often based on Latin vere 'truly'

| Italian $\quad$ how many have escaped? -- forse tre 'possibly three' (*circa tre) |
| :--- |
| Hungarian $\quad$ a what should I say fifty |

8.5.1.2. tendency for using non-affirmative, non-realis mood, future tense

Italian La mamma avrà più o meno sessanta
German Mutter wird (so) (an die) sechzig sein
Georgian see below

### 8.5.1.3. interrogative pronoun (how many?):

Motlav three chickens or how many?
8.5.1.4. "restricted randomness" (Bultinck)

Dutch pakweg honderd kippen ontsnapten take.away 100 chickens escaped 'take your choice: 100 N '
general let us say 100 chickens escaped

| 8.5.1.5. concessive, conditional |  |
| :--- | :--- |
| general | lower NUM if not next higher NUM <br> three if not four |
| Hungarian $\quad$three chickens escaped, if it was not more/four <br> $s z a ́ z-v a l a h a ́ n y ~$ <br> hundred-however.many |  |

### 8.5.2. disjunction

### 8.5.2.1. non-exclusive disjunctive co-ordination of two or more neighbouring numerals English two or three fifty or sixty (vs. exclusive disjunction: Is 17 minus 14 two or three?

### 8.5.2.2. non-exclusive disjunctive co-ordination (or other syntactic or morphological combination) of a numeral and a deictic degree/amount word, or an interrogative expression

English five or so
Hungarian harminc vagy hány tere
thirty or how.many its.square

### 8.5.3. indefiniteness: indefinite article or pronoun, free choice indefinite

 rationale: Non-unique identifiability of a precise numerical value would thus be metaphorically derived from non-unique identifiability of a referent.$\left.\begin{array}{ll}\text { Bavarian } & \begin{array}{l}\text { (a) zwoar-a drei } \\ \\ \\ \\ \text { (a) siam-a acht Bia <ein sieben ein acht Bier } \\ \text { only when there are two numerals in a row; } \\ \text { in earlier German ein accompanying a single numeral too }\end{array} \\ \text { Dutch } & \text { een tachtig à negentig kippen } \\ & \text { only round numerals?, only when two numerals are combined by à? } \\ & \text { zo'n honderd kippen (only with 100, where 1 is there anyhow?) } \\ \text { un dieci, un cinque }\end{array}\right\}$

Basque bat numeral 'one', indef. article; batzak plural of bat, quantifier 'some' etxe bat 'one house; a house' ume-ren bat child-GEN one/a 'some child or other' liburu bat-en bat book indef-GEN indef 'some book or other' same construction with numerals (though genitive may be dropped): hogei(-ren) bat twenty(-GEN) indef 'APPROX 20'
Cl. Tibetan dge.slong lnga. brgya. zhig. monk five hundred INDEF
'about 500 monks'
zhig an indefinite particle ('one'), meaning APPROX after a numeral or a plural
Georgian erti orasi çiçila mainc çaikca
one two-hundred chicken at.least escaped
'at least some two hundred chickens escaped'
erti cardinal numeral 'one', also '(ein)mal' as in 'komm mal her',
as APPROX apparently limited to combinations with mainc 'at least', or postposition 'until/up to'
see further Heine \& Kuteva (2002) on 'ONE (NUMERAL) > (8) SOME', mentioning Basque, Lezgian (clock times), Tamil, Yagaria, $\|$ Ani, Seychelles Creole French; also alluding to the possibility of an opposite shift 'some (more)' + 'plain, unmarked' > numeral 'one'.

### 8.5.4. interrogative pronoun (how many?): ignorative, like indefinite

### 8.5.5. definiteness: definite article

rationale: inclusiveness or totality of reference as model for the entire relevant region is to be taken into consideration as a possible amount

German an die, um die
Cl. Greek

Dutch tussen de tachtig en de negentig kippen
('either precisely 80 or precisely 90 '???,
cf. een tachtig à negentig kippen, with indef article/'one',
which could be true if, say, 78 chickens were involved)
om en bij de honderd/driëndertig $N$
8.5.6. possessive (related to definite?)

German er trinkt jeden Tag (so) seine fünf Bier
Italian Il costo della macchina è sui 40 milioni


## 8..5.8. limiting rather than specifying

### 8.5.8.1. (positive) evaluative adjective or adverb

German gut (und gern) NUM
English a good three kilometers
Rhaeto-Romance often based on Latin bene 'well'
Hungarian jó száz méterre
good 100 metres
Italian una diecina buona / una buona diecina di chilometri
Lo stadio dista tre chilometri buoni / *?tre buoni chilometri
8.5.8.2. comparison (a quantificational strategy, see below)
8.5.8.2.1. quantitative comparison of inequality: MORE (disjunctive connector) LESS

Italian più o meno NUM 'more or less'
Polish mniej wiecej trzy kurczaki

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more less three chickens
Tagalog h(um)igit-kumulang na/-ng NUM
exceed-fall.short LINKER NUM
'more or less NUM'
equivalent to plural word \(m g a\), which does not take the linker, though
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### 8.5.8.2.2. quantitative comparison of equality

Italian Maria ha quasi dieci anni
Lele (Chadic) gìna wèlè sùbù máàní
like day three ANAPH
'about three days'
gìna preposition 'as, like'
máàní propositional anaphor
anaphor to a previous proposition
reference to events: kăă máàní
thing so/thus
tù gìna dùbàngú máàní
goat like sheep ANAPH
'a goat is like a sheep’ (cf. deictic degree/amount word)
8.5.8.3. limitors (see above, Comparison): not more than, not less than

English at least, at most
German mindestens; fast
Georgian at least

### 8.5.8.4. negator (upper limit)

German keine NUM

### 8.5.9. grading: attenuation, diminution

### 8.5.9.1. marking of numeral itself

English six-ish (like green-ish)
Italian for decades: -ina una trent-ina di polli 'about 30 chickens' una dec-ina 'approx 10' (base: dieci)
verb agreement in number either semantic (plural) or syntactic (singular) cf. grand-ino 'somewhat large, kind of big' but synchronically perhaps a case of homonymy, also coqu-ina 'kitchen, place for cooking'
French une cent-aine, trent-aine???
8.5.9.2. diminutive of noun in construction with numeral

| Italian | un' oretta 'about an hour' |
| :--- | :--- |
| German | drei Stündchen? |

8.5.10. general adjectivalizing affix on numeral

Finnish kolme ' 3 '
kolm-isen vuotta 'about three years'
viit-isen-sataa kanaa 'about 500 hens'
five-APPROX-hundred hens
-ise, -isen, -inen 'made of, like, -ish, -ly, belonging to, of the nature of'
8.5.11. exploiting quantificational resources: lexical and morphological
8.5.11.1. generic designation of odd (as opposed to even) numbers

English fifty-odd books
$=$ somewhat more than 50 , but closer to 50 than to 60 , could well be an even number, e.g. 52 or 54 grammaticalized? a suffix? compare with fifty odd books NUM ADJ N
Qiang hod,u-ma-Xtße
ten-NEG-stop
'ten-odd', 'APPROX ten' (apparently limited to ' 10 ') (spatial: movement?)
8.5.11.2. the noun 'number' (collective?, see below)

Swedish ett tio-tal/hundra-tal arbetare a ten-/hundred-number workers 'about 10/100 workers'

Dutch een honderd-tal kippen
8.5.11.4. repetition (aktionsart quantificational (pluractionality))

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German Aber-tausend(e), aber-hundert(e)
    cf. (aber und) aber-mals 'wieder und wieder'
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### 8.5.11.5. collective

### 8.5.11.5.1. a noun for collectives

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Finnish kunta 'community, parish' > NUM-kunta
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### 8.5.11.5.2. derivational collective, special collective numerals

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German eine Hundert-schaft, is a noun, though, not a numeral, meaning 'a group of (precisely) hundred'
Italian cento 100, cent-inaio 'hundred', un centinaio/migliaio di \(N\) 'approx hundred/thousand N ' verbal number agreement either plural or singular le centinaia 'the 100' (plural is old neuter) due centinaia, tre migliaia 'approx two hundred/three thousand' a centinaia 'zu hunderten’ (-aio agentive nouns, also locative-collective)
Lithuanian NUM-etas N-GEN.PL
Dhivehi for higher degree of uncertainty, limited to numbers 2-10, indefinite collective numerals in dative form (collective numerals formed by adding 'thing' or 'people' after numeral stem) (Aḍ̣̣ū dialect)
Finnish
\begin{tabular}{ll} 
kymmene- '10' & kymmen-kunta 'approx 10' \\
sata '100' & sata-kunta \\
tuhat '1000' & tahat-kunta \\
& complex words behave like numerals, \\
& cf. kunta 'community, parish'
\end{tabular}
Georgian as-ob-it hundred-COLL-INS
'by the hundreds'
at-as-ob-it
ten-hundred-COLL-INS
cf. misxl-ob-ita 'by the ounce, ouncewise' urm-ob-ita 'by the cart, cartwise'
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### 8.5.11.6. multiplicative numerals <br> English a tenfold

### 8.5.11.7. mid-range quantifier

| English | some NUM |
| :--- | :--- |
| German | einige NUM |
|  | Er ist höchstens einige 30 Jahre alt |
|  | $=30$ years and some more? |

### 8.5.11.8. plural word

Tagalog proclitic $m g a$ as a marker of plural with unmarked nouns, deictic pronouns, personal nouns, adjectives, nominalized verbal and adjectival phrases, as a marker of approximation with cardinal numerals and time expressions: mga sampu 'about ten' nang mga ala una 'at about one o'clock' sa mga buwan ng Enero 'around the month of January' mga kamakalawa 'about the day before yesterday’

### 8.5.11.9. plural inflection of round numerals

very common when higher numerals are nouny
English tens, dozens, hundreds of
Lithuanian Ambrazas 1997: 587
Hungarian not with 10
Oriya hundred-REDUPL years 'hundreds of years'
8.5.11.10. paucal marking on noun (without accompanying numeral or also in construction with numeral)

## 9. Specialization of approximators for numerals in context of

| German | gegen NUM |
| :---: | :---: |
| Bavarian | um-ara NUM |
| English | six-ish 'around six o'clock' |
| Dutch | rond drie uur (= ongeveer om drie uur) |
| French | vers trois heur, vers midi |
| Italian | verso le tre, verso mezzogiorno <br> (verso 'nach, gegen, gegenüber') <br> alle tre circa, circa alle tre <br> (circa also postposed: circa cinque polli/*cinque polli circa) |
| Hungarian | körülbelül három órakor |
|  | APPROX three o'clock |
|  | harom-felé |
|  | three-towards (shortly before the time mentioned) |
|  | can only be uswed with full hours, quarter, half, and three-quarter hours, not with minutes (*towards five ten) |
|  | felé 'towards' temporal and local (e.g. towards north) |

## 9.2. age?

| Italian | La mamma è sulla sessantina |
| :--- | :--- |
| German | Mutter ist in den sechzigern |

## 9.3. money

Georgian the postposition/suffix -mde 'up.to' is not joined with the numeral, as elsewhere, but with the following noun for 'meter' or 'dollar' five dollar-/meter- $m d e$, rather than five- $m d e$ NOUN

## 9.4. measures

Georgian mood difference for APPROX (conditional) 'the wish weighed six pounds' vs. 'the fish would weigh six pounds', 'so [2nd person deictic], six pounds it would come out' (cf. German Er wird dir so seine sechs Pfund wiegen, Sie wird dir so ihre 60 sein)

