Numbers and Colors

translating William Carlos Williams…

ly sfə   stu spo jɛðɪnɜ-f kɪ   ʃlɜ-ty   bɜ-to.
I before now eat plum-PL within container-NOM cold-LOC.

ly ɣrɛʃku t'e   la sfə   stu ɣiju
I believe EMB.CL.START you before now save

t'e   la spo frata-f   kro   stu t'a   t'a.
EMB.CL.START you eat that-PL   after now EMB.CL.END EMB.CL.END

-- mɪnoxɛve

translating William Carlos Williams…

[symbols] [symbols] [symbols] [symbols]

vɛ-buzðaz-ðib-dʒazbog.   be-bu-za-vɛ-gæb-vo.
it-plums-in-icebox   have-PST-make-it-eaten.food-1SG

bovɛvbab   bu-bo-za-vɛ-vɛvzəv-vu-dʒo-va   bɛggæb.
probably   PST-CONTINUING-make-it-reserved-2SG-IO-UNSPECIFIED breakfast

--Bivodbi

translating William Carlos Williams…

pʰa-ma   χa ŋæ-ŋænigu bo   ki-ma   ʃi-ʃi   nonigo θæ
eat-RCNT.PAST I   PL-plum   that be-RCNT.PAST PL-one freezer inside

bo   gabu-ma-βæ   χæ naχiko   sæ
that keep-RCNT.PST-PROB you breakfast for

'I have eaten the plums that were in the icebox,
      and which you were probably saving for breakfast'

                              --Zakʰo

for your next (completely optional) trick:

translate either:

a Zen koan (many can be found through The Zen Site)

or one of Jack Handey's Deep Thoughts

I'll display your morpheme-by-morpheme gloss, but not your translation, and we'll see if people can figure out what you've translated.

Numbers

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Lardil **warrnge** 'one', **kiyan** 'two', **mungkalan** 'three' (sort of)

Warlpiri **jika** 'six' (< English 'six')
       wirlki 'seven' (and also 'hooked boomerang')
       milpa 'eight' (and also 'eyes')
       kardaku 'nine' (and also 'cup')

Numbers

It's common for languages to borrow numbers, even if they already have them.

The new system then either replaces the old system completely, or you get two systems, for counting different things.

(e.g., Tagalog uses Tagalog numerals for most things, but Spanish numerals for weights, measures, ages beyond nine…)

(and Japanese has Japanese numbers for 'default' counting, but Chinese numbers for most other things; more about that later)

Numbers

If you decide to create a number system for your language, questions to ask yourself…

Numbers

- how much 'irregularity' is there?

  Mandarin
  sān   'three'
  shí   'ten'
  shísān   'thirteen'
  sānshí   'thirty'

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    sān   'three'
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Once you know the first ten numbers in Mandarin, you're ready to count to 99.
Once you know the first ten numbers in English…
    you're ready to learn some more numbers (*eleven, twelve, twenty…*)

(some of the following data on numbers are from http://www.sf.airnet.ne.jp/ts/language/number.html).

Numbers

- how much 'irregularity' is there?
- which base(s) will you use?

Huli

mbira	'1'	nguira-ni mbira	'16' ('15 and 1')
kira	'2'	nguira-ni kira	'17' ('15 and 2')
tebira	'3'	…	
maria	'4'	ngui ki	'30' ('2 15s')
duria	'5'	ngui ki, ngui tebone-gonaga mbira	
waragaria	'6'		'31' ('2 15s, 1 of the third 15')
karia	'7'	…	
halira	'8'	ngui waraga, ngui kane-gonaga pira	
dira	'9'		'100' ('6 15s, 10 of the 7th 15')
pira	'10'		
bearia	'11'		
hombearia	'12'		
haleria	'13'		
deria	'14'		
nguira	'15'		

Numbers

- how much 'irregularity' is there?
- which base(s) will you use?

Basque

bat	'1'	hogei ta bat	'21'
bi	'2'	hogei ta bi	'22'
hiru	'3'	hogei ta hiru	'23'
lau	'4'	hogei ta lau	'24'
bost	'5'	hogei ta bost	'25'
sei	'6'	hogei ta sei	'26'
zazpi	'7'	hogei ta zazpi	'27'
zortzi	'8'	hogei ta zortzi	'28'
bederatzi	'9'	hogei ta bederatzi	'29'
hamar	'10'	hogei ta hamar	'30'
...		hogei ta hamaika	'31' ('20-11')
hogei	'20'	hogei ta hamabi	'32' ('20-12')
		...	
		berrogei	'40' ('2 20s')
		ehun	'100'

Numbers

- how much 'irregularity' is there?
- which base(s) will you use?

Ndom

sas	'1'
thef	'2'
ithin	'3'
thonith	'4'
meregh	'5'
mer	'6'
mer abo sas	'7' ('6 and 1')
mer abo thef	'8' ('6 and 2')
…	
mer an thef	'12' ('6 times 2')
mer an thef abo sas	'13' ('6 times 2, and 1')
…	
tondor	'18'
tondor abo sas	'19' ('18 and 1')
nif	'36'

Numbers

- how much 'irregularity' is there?
- which base(s) will you use?

Alamblak

(has words for 1, 2, 5, and 20. Everything else is a combination of those…)

rpat   '1'

hosf   '2'

hosfirpat   '3' (2 and 1)

hosfihosf   '4' ('2 and 2')

tir yohtt   '5 exact'

tiryohtti rpat   '6' ('5 exact and 1')

…

tir hosf   '10' ('2 5s')

…

yima yohtt   '20 exact'

…

yima tir yohtt   '100' ('20 times 5 exact')

Numbers

- how much 'irregularity' is there?
- which base(s) will you use?
- how much 'addition and subtraction'?

Yoruba

ikan '1'
meji '2'
meta '3'
merin '4'
marun '5'
mefa '6'
meje '7'
mejo '8'
mesan '9'
mewa '10'

Numbers

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Yoruba

ikan   '1'
meji   '2'
meta   '3'
merin   '4'
marun   '5'
mefa   '6'
meje   '7'
mejo   '8'
mesan   '9'
mewa   '10'   ogun   '20'

Numbers

- how much 'irregularity' is there?
- which base(s) will you use?
- how much 'addition and subtraction'?

Yoruba

ikan   '1'
meji   '2'
meta   '3'
merin   '4'
marun   '5'
mefa   '6'   merindilogun '16' ('4 from 20')
meje   '7'   metadilogun   '17' ('3 from 20')
mejo   '8'   mejidilogun   '18' ('2 from 20')
mesan   '9'   mokandilogun '19' ('1 from 20')
mewa   '10'   ogun   '20'

Numbers

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- which base(s) will you use?
- how much 'addition and subtraction'?

Yoruba

ikan	'1'		
meji	'2'		
meta	'3'		
merin	'4'		
marun	'5'	medogun	'15' ('??-20')
mefa	'6'	merindilogun	'16' ('4 from 20')
meje	'7'	metadilogun	'17' ('3 from 20')
mejo	'8'	mejidilogun	'18' ('2 from 20')
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Numbers

- how much 'irregularity' is there?
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Yoruba

ikan	'1'	mokanla	'11' ('one-teen')
meji	'2'	mejila	'12' ('two-teen')
meta	'3'	metala	'13' ('three-teen')
merin	'4'	merinla	'14' ('four-teen')
marun	'5'	medogun	'15' ('??-20')
mefa	'6'	merindilogun	'16' ('4 from 20')
meje	'7'	metadilogun	'17' ('3 from 20')
mejo	'8'	mejidilogun	'18' ('2 from 20')
mesan	'9'	mokandilogun	'19' ('1 from 20')
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Numbers

- how much 'irregularity' is there?
- which base(s) will you use?
- how much 'addition and subtraction'?
- what order do the places go in?

German *zweiundzwanzig* '22' ('two and twenty')

Malagasy *roa amby roapolo* '22' ('two and twenty')

    enina amby dimampolo sy efajato '456'
                ('six and fifty and four hundred')

Numbers

- how much 'irregularity' is there?
- which base(s) will you use?
- how much 'addition and subtraction'?
- what order do the places go in?
- which powers of your base have their own names?

Nukuoro

hulu	'10'
lau	'100'
mano	'10^3'
-mada	'10^4'
-guli	'10^5'
-loo	'10^6'
-ngaa	'10^7'
-muna	'10^8'
-bugi	'10^9'
-baga	'10^{10}'

Numbers

- how much 'irregularity' is there?
- which base(s) will you use?
- how much 'addition and subtraction'?
- what order do the places go in?
- which powers of your base have their own names?
- what is the syntactic status of numbers?

(are they adjectives? nouns? different numbers are different?)

common Algonquian pattern: numbers 1-5 can modify nouns directly, but numbers 6-10 need an additional morpheme:

na'n-ijig ji'nm-ug asugom **te's**-ijig ji'nm-ug (***Mi'gmaq***)

five-AN.PL man-PL six CLASS-AN.PL man-PL

'five men' 'six men'

Numbers

- how much 'irregularity' is there?
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- how much 'addition and subtraction'?
- what order do the places go in?
- which powers of your base have their own names?
- what is the syntactic status of numbers?

(are they adjectives? nouns? different numbers are different?)

Russian   odin stol   'one table'
             dva stol-a   'two table-GEN.SG'
             pjat' stol-ov   'five tables-GEN.PL'

Numbers

- how much 'irregularity' is there?
- which base(s) will you use?
- how much 'addition and subtraction'?
- what order do the places go in?
- which powers of your base have their own names?
- what is the syntactic status of numbers?
- does your language have numeral classifiers?

futa-ri	ni-satu	ni-mai	*Japanese*
two-PERSON	two-VOLUME	two-SHEET	

cha'-ts'ijty	cha'-pajl	cha'-tyek	*Chol*
two-LONG.SKINNY	two-BUNCH	two-TREE	

Advanced topics:
- ordinal numbers (*first, second, third…*)
- fractions
- modified numbers (*at least seven, more than six, eight or more*)
- ….

Colors

Languages vary in how rich their color vocabularies are.

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Dani: 'dark' and 'light'
English: …

Colors

common choice points:
- having a single word for blue and green
- dividing 'blue' into dark and light blue (e.g., Russian)

Colors

- very common for them to be based on nouns
(e.g., *orange*, Lardil *kandukan* 'red' (<*kandu* 'blood'))

Colors

It's not uncommon for a term to be restricted in what it can refer to…

- English *blond* (for that matter, *red* hair is not red,
                    and *white* skin is not white…)
- Tagalog *kayumanggi*
- Japanese traffic lights
- Tibetan *sngon-po* 'blue, but also plants', *ljangkhu* 'green, except for plants'

Colors

other things to think about:
- a productive way of making new colors
  (*ash-colored, coffee-colored*)
- modifying colors (*light brown, dark blue, yellow-ish*)

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