

# 2011 Solutions

## (J) Axolotl in the Water (1/4)

Comparing word forms, we have the following words:

eat	<i>itlacual, notlacual</i>
see	<i>niquitta, quitta, nechitta</i>
confuse	<i>nechixcuepa, quixcuepa</i>
chocolate	<i>xocolatl</i>
dog	<i>itzcuintli</i>
house	<i>calli</i>
axolotl	<i>axolotl</i>
woman	<i>cihuati</i>
meat	<i>nacatl</i>

This leaves us with a few tasks; namely, to determine word order, word formation (morphology), the distribution of 'in,' and a few phrasal components:

in the water	<i>ipan in atl</i>
on top of the hill	<i>ipan in tepetl</i> (by analogy with the above)
on the field	<i>ipan in milli</i> (by analogy with the above)
my father	<i>notah</i>
the man's house	<i>ical in oquichtli</i>

The only word not accounted for is the verb *nipantlalia*, which must mean 'ride.'

Most of the verbs appear to behave similarly with respect to their arguments:

(I) see (the dog)	<i>niquitta</i>
(I) ride	<i>nipantlalia</i>
(The axolotl) confuses (me)	<i>nechixcuepa</i>
(My father) sees (me)	<i>nechitta</i>

In fact, all verbs except *itlacual/notlacual* appear to have the same prefixes indicating person of the subject and object.

	I	<u>he/she/it</u>
me	???	<i>nech-</i>
him/her/it	<i>niqu-</i>	<i>qu-</i>

It is also possible to conceive of an alternative system where the roots of *-itta* and *-ixcuepa* are instead *-quitta* and *-quixcuepa*, and *nech-*, *niqu-*, *qu-* are instead *ne-*, *ni-*, *-*, with *ne-* triggering a change '*qu<ch*'. However, in either case, the pronoun 'I' is seen to be *ni-*, and 'he/she/it' is null.



# 2011 Solutions

## (J) Axolotl in the Water (2/4)

Now we may account for the simplest types of sentences, 3,4, and 7, where there is no possession, prepositional phrase, etc. In these sentences, the word order is verb-subject-object, with *in* before each argument (subject and object) and the verb taking the appropriate prefix(es). This VSO word order with agreement on the verb holds also for 5,8, and 9, although something more needs to be said in these cases. It appears that *ipan* signifies ‘in/on’ and takes a noun with *in*, which fully explains 5 and 8.

Let us turn our attention to 6. We have *ipan in tepetl*, which presumably means ‘on top of the hill,’ and *ical in oquichtli*, which must mean ‘the man’s house.’ Note that *ical* appears similar to ‘house,’ while *in oquichtli* must mean ‘man’ and appears in its most basic form—even though the word has never appeared before, it is apparent that it ends in *-tl/tli/li*, unlike the modified *ical*. We conclude that in possessive phrases, it is the possessed object which changes accordingly, and not the possessor. In this case, the house is possessed and changes ‘*calli*<*ical*.’ In 9, it is again the possessed item *notah* which appears to change in some way.

The key lies in the following realization: the prefix *i-* in *ipan*, *ical*, and the verb *itlacual* is the same and indicates third person for the possessor or subject (for *itlacual*). The prefix *no-* in *notah* and *notlacual* is the same and indicates first person possessor or subject. Besides the similarity of the prefixes *i-* and *no-*, this is also indicated by the similar suffixes of *itlacual* and *cal* (and even *pan* and *tah*), in contrast with the other verbs that end in vowels.

Now, consider the sentences in J2, which will allow us to clarify a few of these details. The second sentence confirms two suspicions by showing an example of *nopan*, which we predict to mean ‘on top of me,’ as well as confirming the lack of a copula (the verb ‘to be’), a phenomenon familiar from 6. The first sentence gives an example of *tlacualli*, presumably the root for *itlacual* and *notlacual*, in the same way that *calli* is the root for *ical* (and *pantli* is the root for *pan*?). While a student may solve most of the problem without this realization, a correct translation to the first sentence will require an additional observation: *tlacualli* is in fact a noun meaning ‘food.’ More literally, the given sentences 1 and 2 mean ‘meat is the food of the dog’ and ‘chocolate is my food,’ respectively. It is also possible to account for *tlacualli* in a different way: *tlacualli* is a version of *-tlacual-* which does not have a subject; namely, a passive! In this case, *tlacualli* would mean ‘is eaten.’ However, this explanation is somewhat less appealing, because we would need to account for the distinct OVS word order in 1 and 2, as well as the distinction between the two types of words.

In fact, English prepositions are rendered in Nahuatl as so-called relational nouns, so that the phrase ‘on top of the mountain’ more literally means ‘the top of the mountain.’ This observation is, however, not necessary for the problem.

### J1.

Word order is VSO (verb-subject-object). Verbs are:

see	- <i>itta</i>
confuse	- <i>ixcuepa</i>
ride	- <i>pantlia</i>



# 2011 Solutions

# (J) Axolotl in the Water (3/4)

These take prefixes for the persons of their subjects and objects: *qu-* for third person object, *ni-* for first person subject, *nech-* for first person object. We also know that *ni-* appears before *qu-*. The bare form of each noun ends in *-tl* after vowels, *-tli* after consonants, and *-li* after *-l*. This bare form always appears with the preposed particle *in*, except sentence-initially (as in 1 and 2). The particle *in* never appears unless the noun is in its bare form. Nouns include:

meat	<i>nacatl</i>
chocolate	<i>xocolatl</i>
dog	<i>itzcuintli</i>
house	<i>calli</i>
axolotl	<i>axolotl</i>
water	<i>atl</i>
man	<i>oquichtli</i>
hill	<i>tepetyl</i>
woman	<i>cihuatl</i>
field	<i>milli</i>
father	<i>'tahtli</i>
food	<i>tlacualli</i>

If the noun is possessed, it drops the suffix *-tl/tli/li* and takes a prefix for the person of its possessor: *i-* for third person, *no-* for first person. Then its possessor follows it. In exactly the same way, prepositions (*pan*, meaning ‘in/on’) agree with their objects, which then follow them.

Pronouns are not realized except as prefixes, and there is no copula 'to be.'

J2.

- a. Axolotl tlacualli ipan nocal.

I	n		m	y		h	o	u	s	e	,		t	h	e					
a	x	o	l	o	t	l		i	s		f	o	o	d	/	e	a	t	e	n

- b. Itzcuintli nopal.

T h e d o g i s o n t o p o f m e

- c. My father's father sees the axolotl.



# 2011 Solutions

## (J) Axolotl in the Water (4/4)

### Grading:

J1 — 10 points

+5/3 points for word order (partial credit may be assigned)

+10/9 points for null copula

+20/9 points for subject/object prefixes (partial credit may be assigned)

+5/3 points for noticing the similarity between nouns and prepositions

+20/9 points for satisfactorily explaining sentences 1 & 2 (partial credit may be assigned)

+10/9 points for identifying and explaining the noun suffix *-li*

Maximum of 80/9 points for an incomplete answer

J2 — 5 points

+5/3 points for (a); 5/6 points for “someone eats,” 5/9 points for “we eat,” etc.

+10/9 points for (b).

+20/9 points for (c), even if *in* is overused; -5/9 points for wrong word order and/or very unreasonable *in* use, -5/9 points for incorrect agreement on a word (up to -10/9).

Total: 15 points

