

#### 4. Navajo gophers (15 marks)

*Navajo (sometimes written “Navaho”) is a Native American language from the Southwest United States. Navajo has more speakers than any other Native American language in the US and Canada, with the number of speakers estimated at between 120,000 and 170,700.*

This problem is about the way in which Navajo speakers build sentences out of a verb V, its subject S (identifying the 'do-er' of the action) and its object O (identifying the 'do-ee'). In English, SVO is almost the only possibility (as in *John ate porridge*), and both SOV (*\*John porridge ate*) and OVS (*\*Porridge ate John*) are ungrammatical (signalled by '\*'). Navajo is different, but it's still helpful to think in terms of V, S and O.

The table below shows some Navajo sentences with their English translations; you'll notice that some sentences have the same translation. The Navajo alphabet includes some unfamiliar letters, but how they are pronounced is not relevant to the problem.

1	Ashkii diné biztał.	The man kicked the boy.
2	Ashkii diné yiztał.	The boy kicked the man.
3	Ashkii lééchaąʔí yiztał.	The boy kicked the dog.
4	Awééchiʔí dibé biztał.	The sheep kicked the baby.
5	*Awééchiʔí diné yiztał.	The baby kicked the man.
6	Awééchiʔí shash binoolchééł.	The bear is chasing the baby.
7	*Dibé awééchiʔí yiztał.	The sheep kicked the baby.
8	Dibé tazhii yiztał.	The sheep kicked the turkey.
9	Diné ashkii biztał.	The boy kicked the man.
10	Diné ashkii yiztał.	The man kicked the boy.
11	Diné awééchiʔí biztał.	The baby kicked the man.
12	Diné dóola bizgoh.	The bull gored the man.
13	*Dóola diné yizgoh.	The bull gored the man.
14	Dóola shash yizgoh.	The bull gored the bear.
15	*Lééchaąʔí ashkii biztał.	The boy kicked the dog.
16	Mósí naʔazízí yinoolchééł.	The cat is chasing the gopher <sup>1</sup> .
17	*Mósí shash bishxash.	The bear bit the cat.
18	*Mósí shash yishxash.	The cat bit the bear.
19	Mósí tazhii yinoolchééł.	The cat is chasing the turkey.
20	Naʔashjéʔii tsísʔná bishish.	The bee stung the spider.
21	Naʔashjéʔii wóláchíí yiisxí.	The spider killed the ant.
22	Naʔastsʔoqsí t sísʔná bishish.	The bee stung the mouse.
23	Naʔastsʔoqsí t sísʔná bishish.	The bee stung the mouse.
24	Naʔazízí wóláchíí yiisxí.	The gopher killed the ant.
25	*Naʔazízí mósi binoolchééł.	The cat is chasing the gopher.
26	Naʔazízí wóláchíí yinoolchééł.	The gopher is chasing the ant.
27	Shash awééchiʔí yinoolchééł.	The bear is chasing the baby.
28	Shash doola bizgoh.	The bull gored the bear.
29	Shash mósi bishxash.	The cat bit the bear.
30	Shash mósi yishxash.	The bear bit the cat.
31	Tazhii dibé biztał.	The sheep kicked the turkey.
32	Tazhii mósi binoolchééł.	The cat is chasing the turkey.
33	Tsísʔná naʔashjéʔii yishish.	The bee stung the spider.
34	*Tsísʔná naʔastsʔoqsí yishish.	The bee stung the mouse.
35	Wóláchíí naʔashjéʔii biisxí.	The spider killed the ant.
36	Wóláchíí naʔashjéʔii biisxí.	The spider killed the ant.
37	*Wóláchíí naʔazízí biisxí.	The gopher killed the ant.
38	*Wóláchíí naʔazízí binoolchééł.	The gopher is chasing the ant.

<sup>1</sup> A gopher is a small American rodent, about the size of a large hamster.

**Q4.1.** Indicate which of the following Navajo sentences is grammatical, translate them into English, and if ungrammatical, suggest the simplest correction(s).

39. Łééchaąʔí awééchiʔí yinoólchéél.

40. Tsísʔná ashkii bishish.

41. Mósí dibé yinoólchéél.

42. Naʔastsʔqqsí naʔashjéʔii bishxash.

43. Wóláchíí diné yiisxí.

**Q4.2.** The following two sentences, which include a previously unseen word, are both grammatical and mean the same thing. Suggest a possible English translation of these sentences.

44. Gah mósí biisxí.

45. Mósí gah yiisxí.

**Q4.3.** Explain as concisely as you can the rules of Navajo grammar that emerge from these sentences, concentrating particularly on the rules relevant to the ungrammatical sentences.

4.1.	sentence	grammatical?	Correction needed	English translation (after correction)
	19			
	20			
	21			
	22			
	23			
4.2.				
4.3.				

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POINTS: 19

- 4.1: 2 each sentence; 1 for one correct cell (total 10)
- 4.2: 2
- 4.3: 2 or 4 per point as indicated, fewer for partially correct. (total 7)

4.1.	sentence	grammatical?	Correction needed	English translation (after correction)
	19	yes		The dog is chasing the baby. [accept ... chased...]
	20	no	Switch order of first two words. <u>Or:</u> Ashkii tsís?ná bishish	The bee stung the boy.
	21	yes		The cat is chasing the sheep. [accept ... chased ...]
	22	yes		The spider bit the mouse.
	23	no	1a. Switch order of first two words. <u>Or:</u> 1b. Diné wóláchíí yiisxí. Or: 1c. Put <i>diné</i> at start of sentence. Or: 1d. <i>diné</i> before <i>wóláchíí</i> <u>Or:</u> 2. [as in 1 and also] change yiisxí to biisxí.	1. The man killed the ant. 2. The ant killed the man.
4.2.	'The cat killed the X.' [X should be a small animal or bird of similar size to cat, turkey, sheep; <i>gah</i> actually means rabbit.]			
4.3.	<ul style="list-style-type: none"> <li>• verb final [1 points]</li> <li>• prefix 'y' to V for SOV, prefix 'b' for OSV [2 points]</li> <li>• the first of two nouns must be 'superior' to the second in a hierarchy where: adult &gt; baby = large animal &gt; small animal &gt; insect/spider [4 points]</li> </ul> <p>More precisely:</p> <ol style="list-style-type: none"> <li>1. Adult humans and children and lightning</li> <li>2. Human infants and large animals</li> <li>3. Medium-sized animals</li> <li>4. Small animals</li> <li>5. Natural forces other than lightning</li> <li>6. Abstractions</li> </ol> <p style="text-align: right;">[7 points total]</p>			