

Phonemic Analysis Example

1. [esféra] 'sphere'
2. [kása] 'houses'
3. [asustár] 'frighten'
4. [péska] 's/he fishes'
5. [rúsos] 'Russians'
6. [lósas] 'tiles'
7. [suéño] 'dream'
8. [asuét̚o] 'vacation'
9. [izla] 'island'
10. [ezβé̞l̚to] 'slender'
11. [d̥ézðe] 'since'
12. [sésos] 'brains'
13. [eleksjón] 'election'
14. [píso] 'apartment'
15. [kási] 'almost'
16. [késo] 'cheese'
17. [d̥esjér̚to] 'desert'
18. [sjér̚to] 'certain'
19. [mízmo] 'same'
20. [áznos] 'asses'
21. [rázɣo] 'feature'

1. Tabulate the environments

[s]	e__f (1)	o__a (6)	a__i (15)
	a__a (2)	a__# (6)	e__o (16)
	a__u (3)	#__v (7)	e__j (17)
	u__t (3)	a__v (8)	#__j (18)
	e__k (4)	#__e (12)	
	u__o (5)	k__j (13)	
	o__# (5,12)	i__o (14)	

[z]	i__l (9)
	e__β (10)
	e__ð (11)
	i__m (19)
	a__n (20)
	a__ɣ (21)

2. Look for patterns

[s]	V__C (1,3,4)	[z]	V__C _{voiced} (except glides) (9,10,11,19,20,21)
	V__V (2,3,5,6,14,15,16)		
	V__# (5,6,12)		
	#__V (12)		
	__Glide (7,8,13,18)		

3. Formulate competing hypotheses

Hypothesis A: /s/ → [z] / __ C_{voiced} (except glides)

Hypothesis B: /z/ → [s] / { __ C_{voiceless}, __V, __#, __Glide }

Hypothesis A is simpler, hence preferred

4. Look at syllable structure

The 'except glides' part of hypothesis A is inelegant. We see, however, that when [s] is followed by a glide, the glide and [s] are part of the same syllable:

[súé . ño]
[a . súé . t̚o]
[e . lek . sjón]
[sjér . t̚o]

On the other hand, we find that [z] is always at the end of a syllable:

[íz . la]
[ez . βé̞l̥ . t̚o]
[d̥éz . ðe]

Thus, hypothesis A can be reformulated:

Hypothesis A': /s/ → [z] / __ . C_{voiced}

5. Conclusion

The phoneme is /s/, with two allophones: [s] and [z]; their distribution is governed by the rule in hypothesis A'.