The effect of the suprasegmental structure of stimulus on word activation processes

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Introduction

Adequate suprasegmental structure is an indispensable prerequisite for linguistic units to fulfil their communicative functions.

Word prosody (e.g. word stress, tone) is represented in the mental lexicon
→ influences the word activation processes.

Introduction

The role of prosody in Hungarian
– fixed (first syllable) word stress
– intonation (opposed to tone languages)
→ neither melody/tone nor stress
has a distinctive function at the lexeme level

What are the effects
of the stimulus prosody
on word activation processes?

Hypothesis

In word association tests the suprasegmental pattern of the stimulus influences the word accessing processes involved and thereby the results.

Stimuli that are non-neutral in terms of suprasegmental properties would trigger non-typical processes in the subjects.

Subjects, material and method

30 university students in 3 groups
(10 people per group):

1. group: stimuli with **neutral** (non-emotional) suprasegmental structure
2. group: the same words with a **non-neutral** pattern (realized with a different melody, voice quality or intensity)
3. (control) group: **mixed** stimuli (both neutral and modified ones)

Subjects, material and method

Experiment conditions:

- the stimuli were played from digital record
- 30 seconds association time was allowed (all words that come to mind)
- the outputs were also recorded (minidisc)

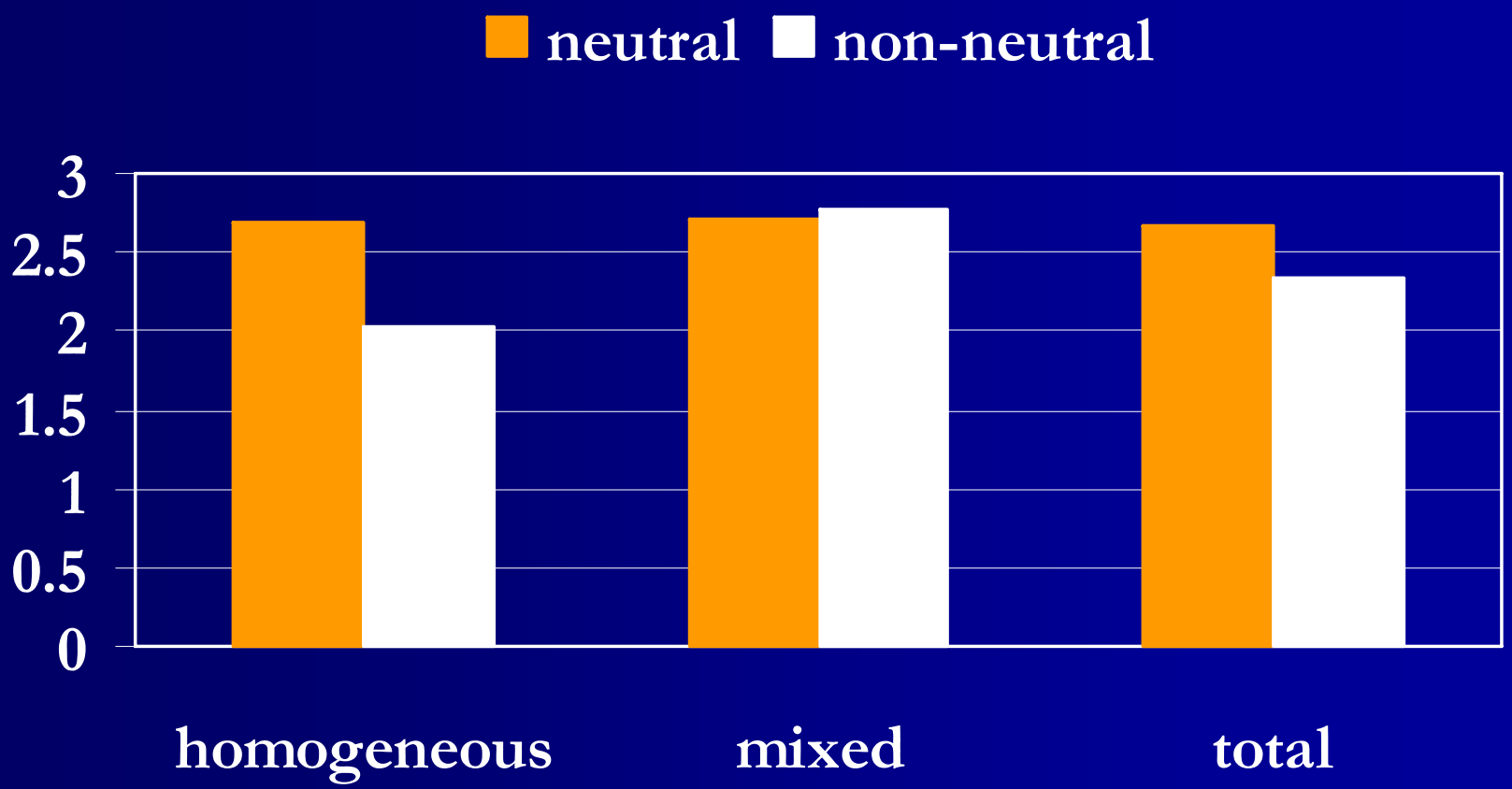
Subjects, material and method

	Stimuli	Neutral	Non-neutral
imperative	*csönd*	'silence'	'be quiet/shut up!'
	futás	'running'	'run!'
slang	*ebéd*	'lunch'	'lunch is ready!'
	segítség	'help' (noun)	'help!'
	király	'king'	'cool'
	paraszt	'peasant'	'boor, uneducated'
gentle	*cica*	'kitten'	'sweet-heart, darling'
	nyugalom	'stillness'	'don't worry'

Analysis

- reaction time
- number of items and words
- topics
- prosody of stimuli

Results:
Average reaction time (s)



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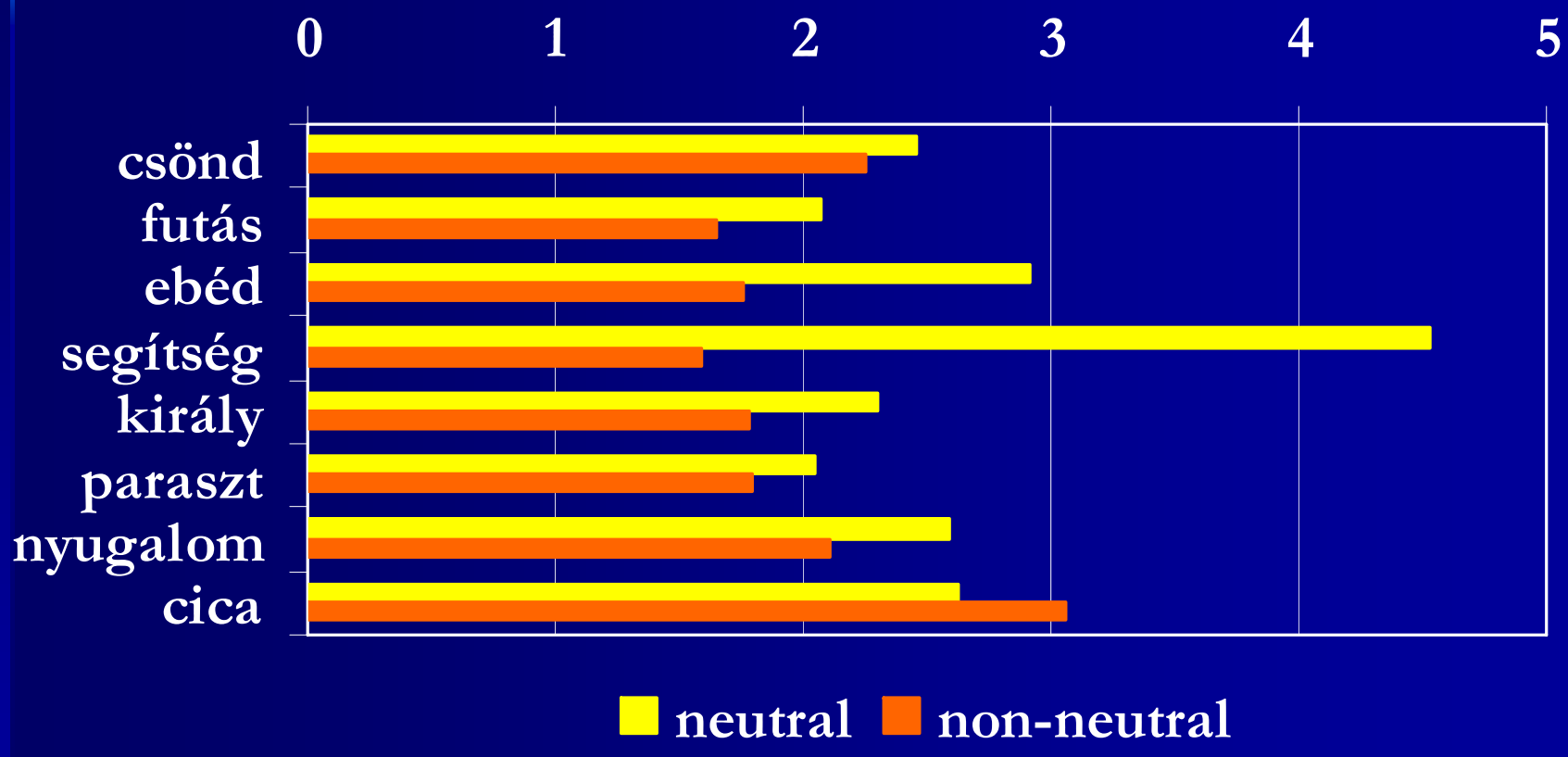
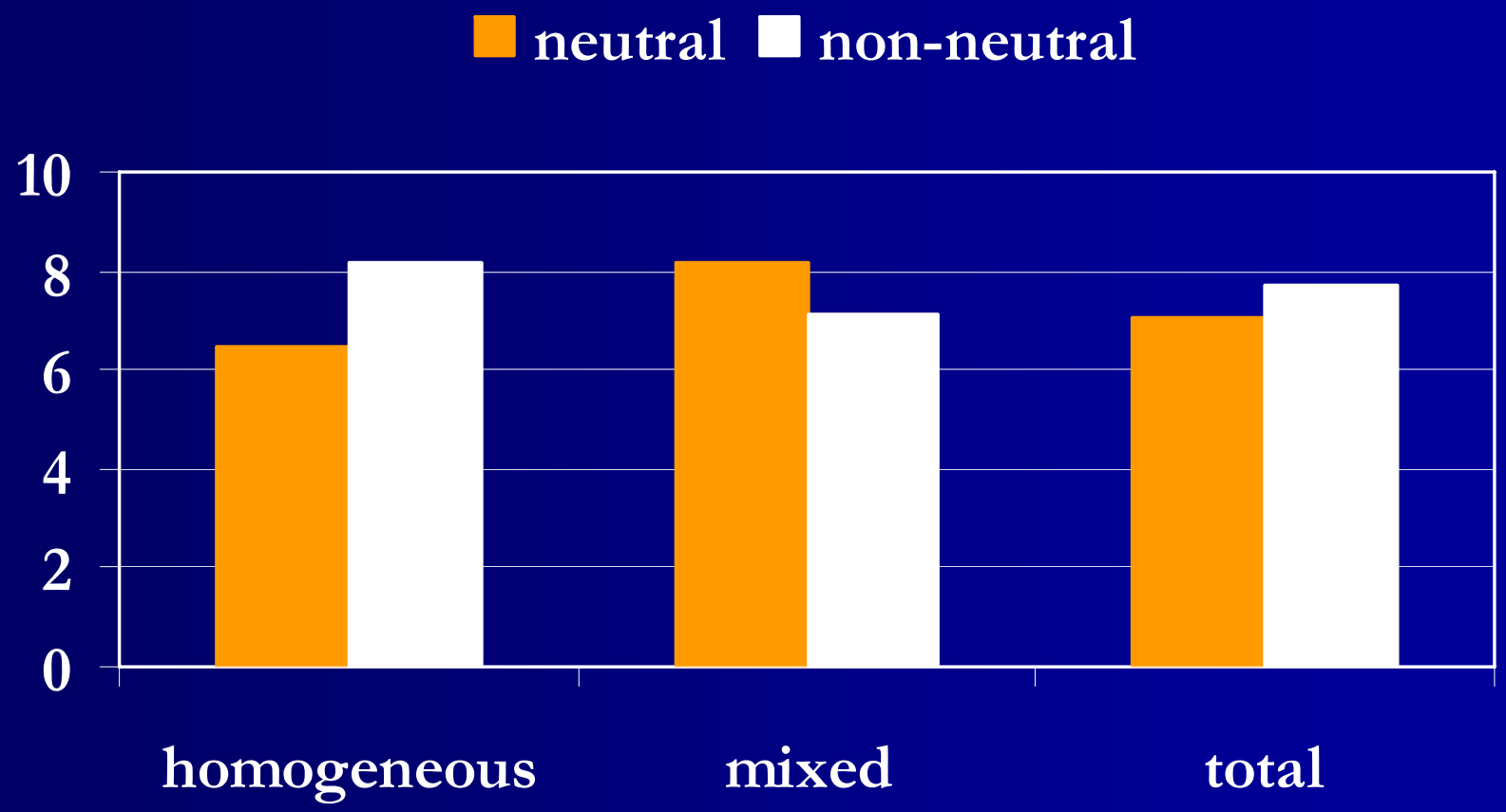
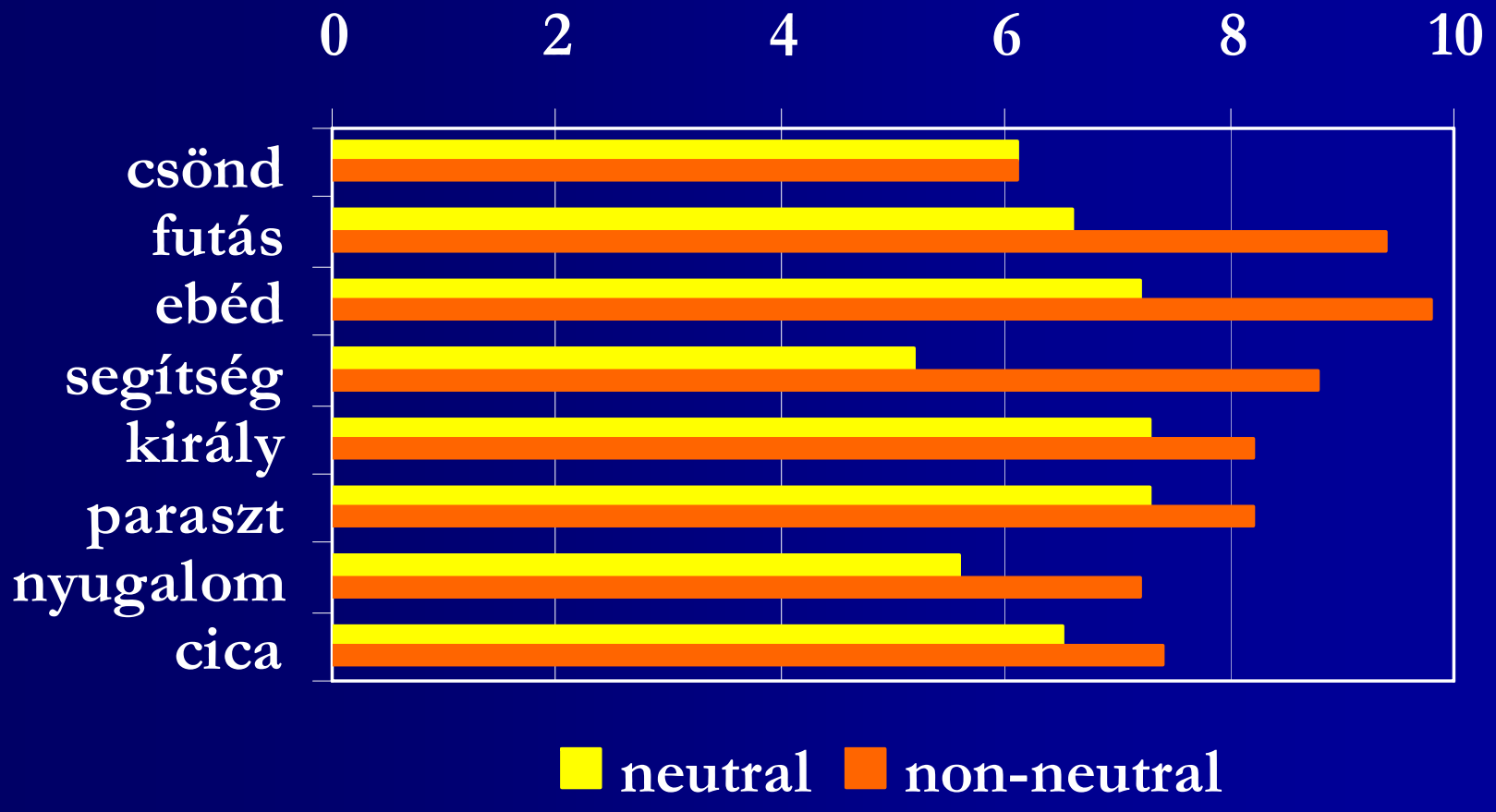


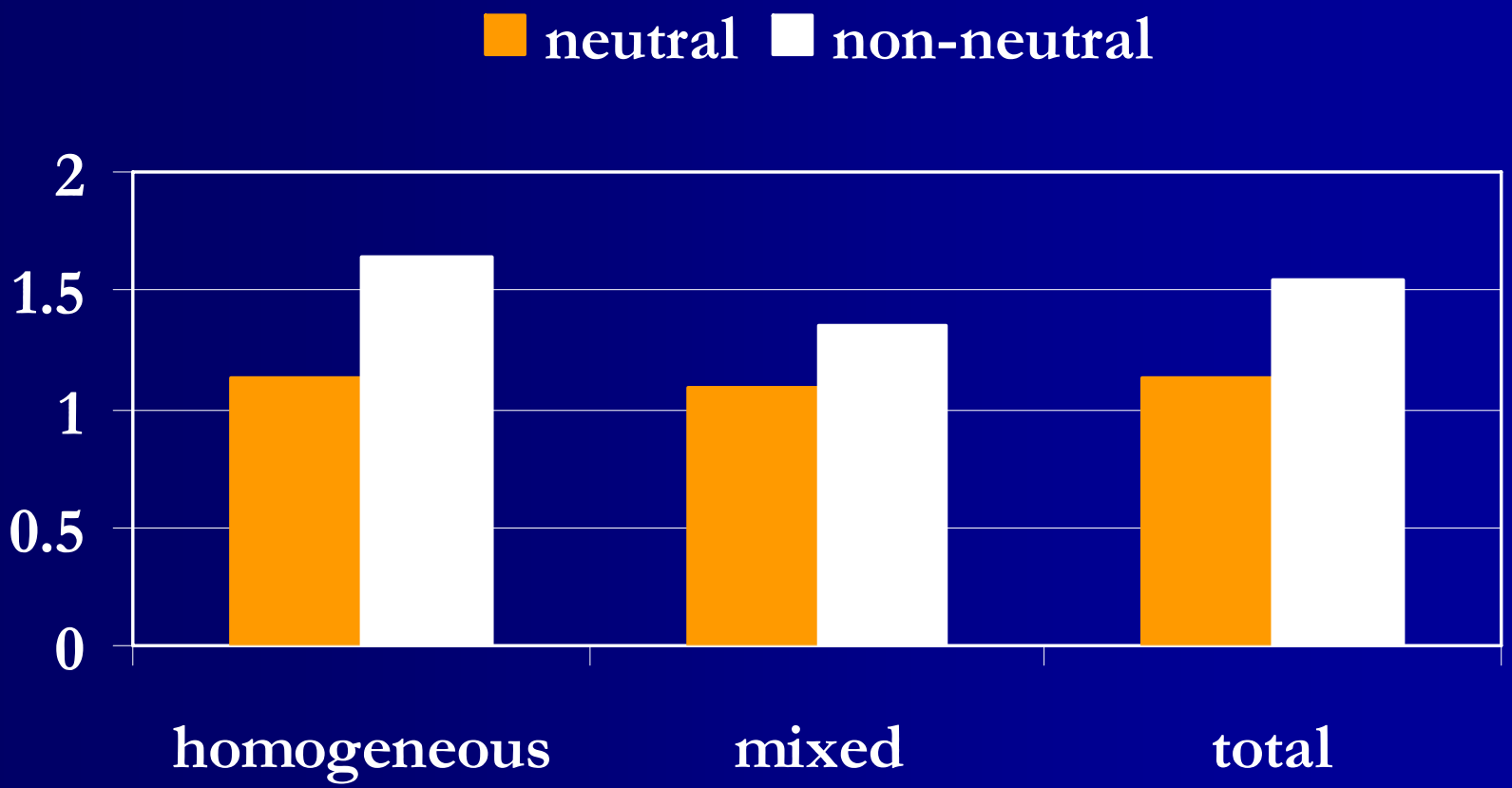
Results:
Average number of items



Results:
Average number of items



Results:
Average number of words per item



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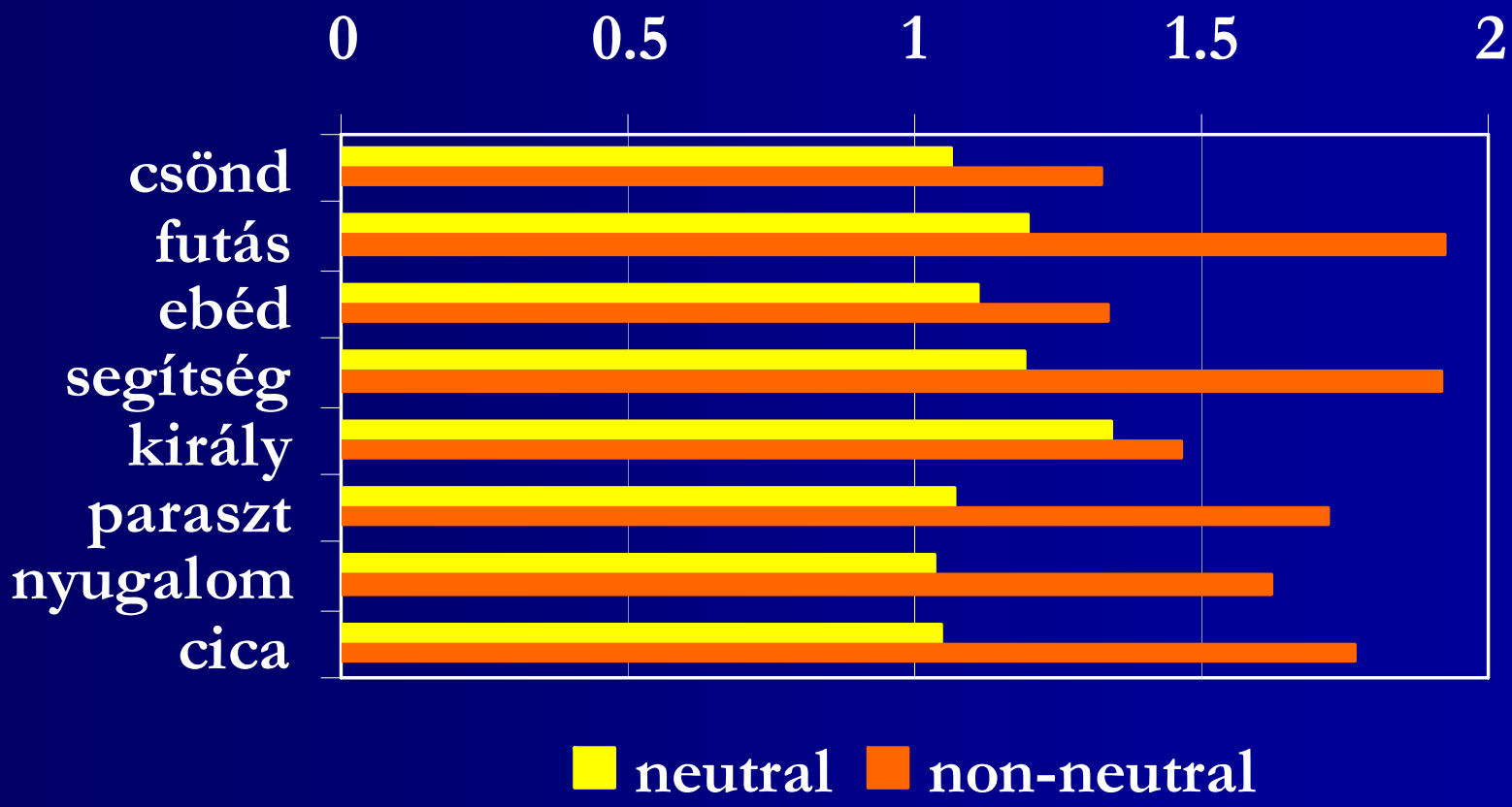
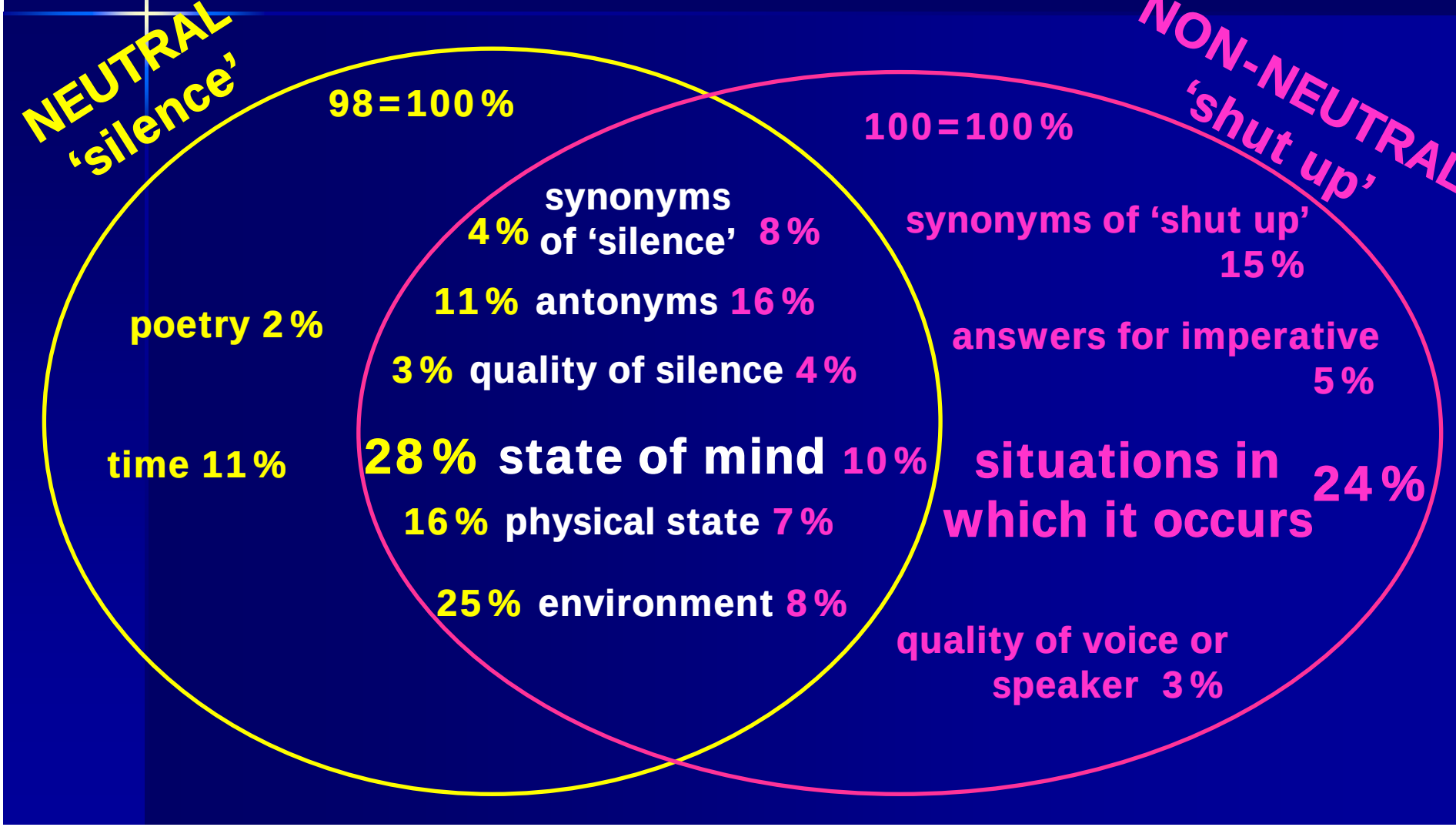
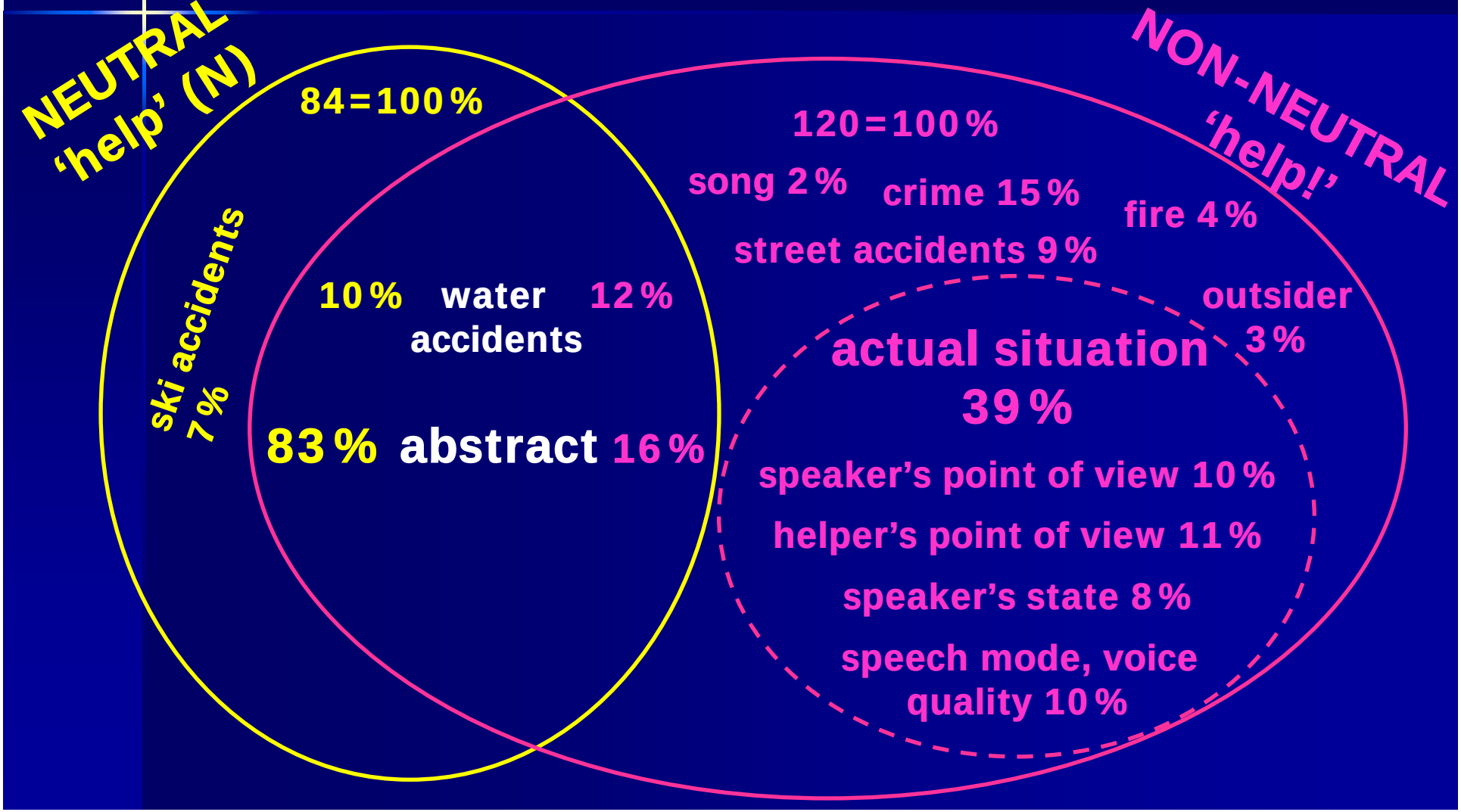
Average number of words per item



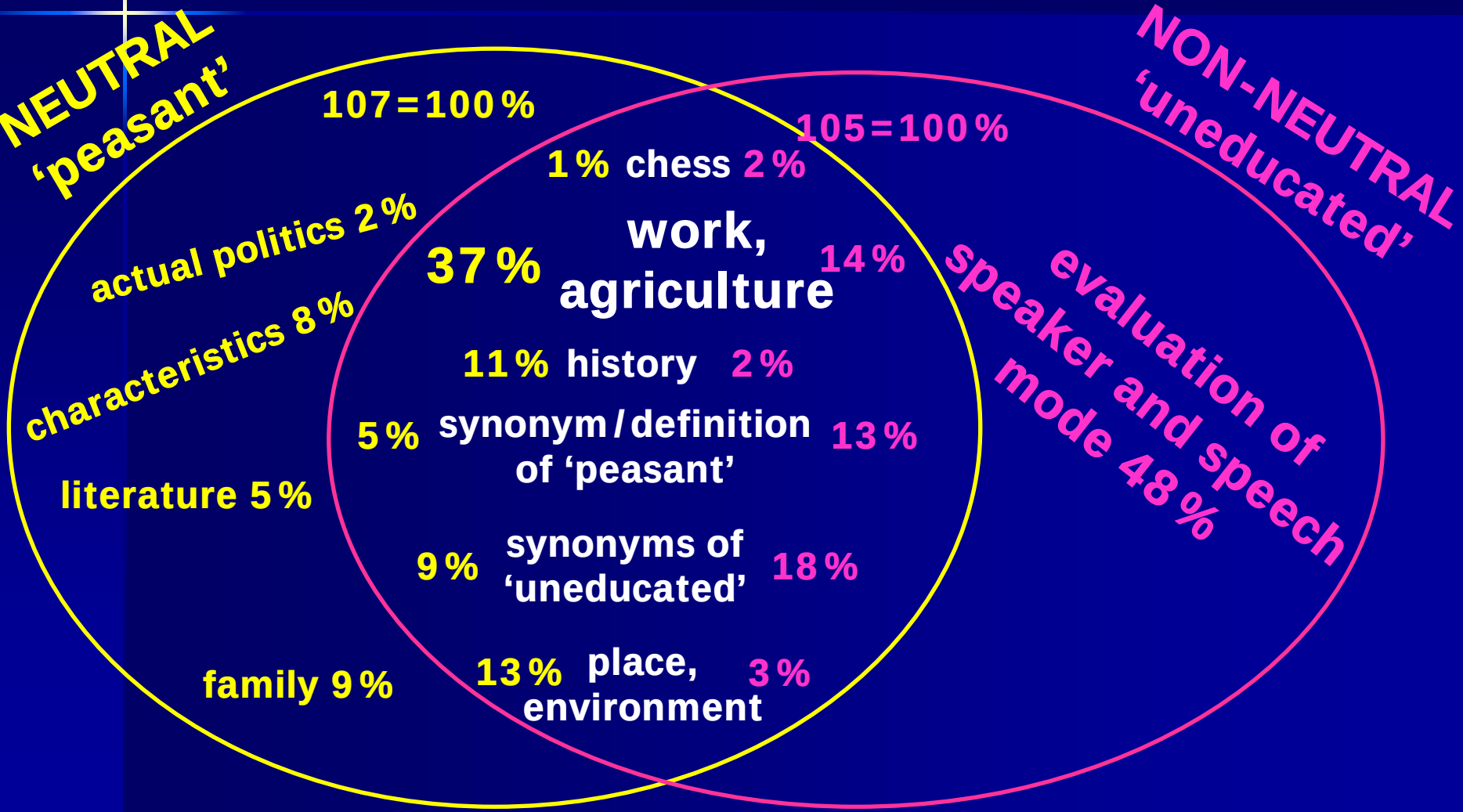
Results: Topics
1. example: *csönd*



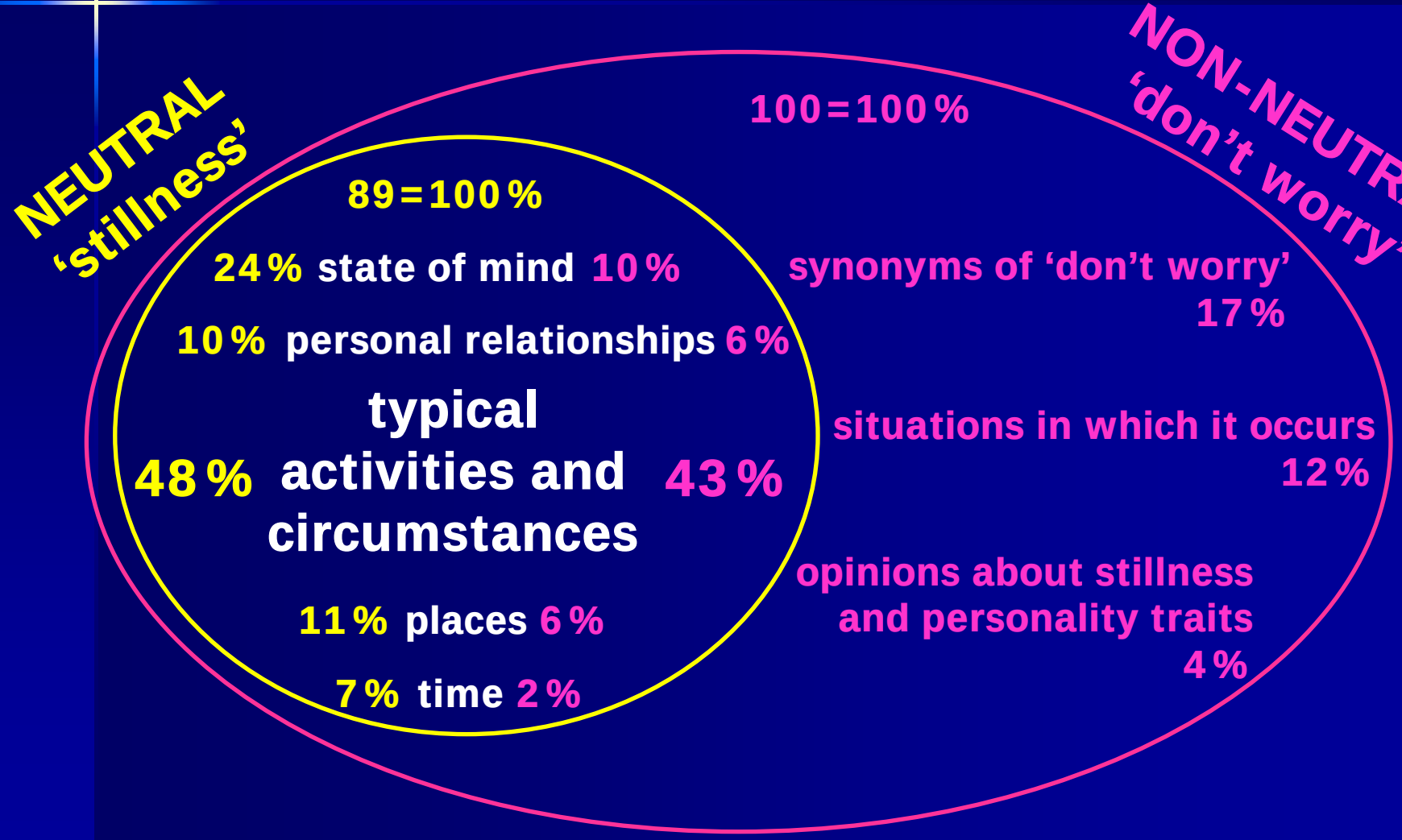
Results: Topics
2. example: *segítség*



Results: Topics
3. example: *paraszt*

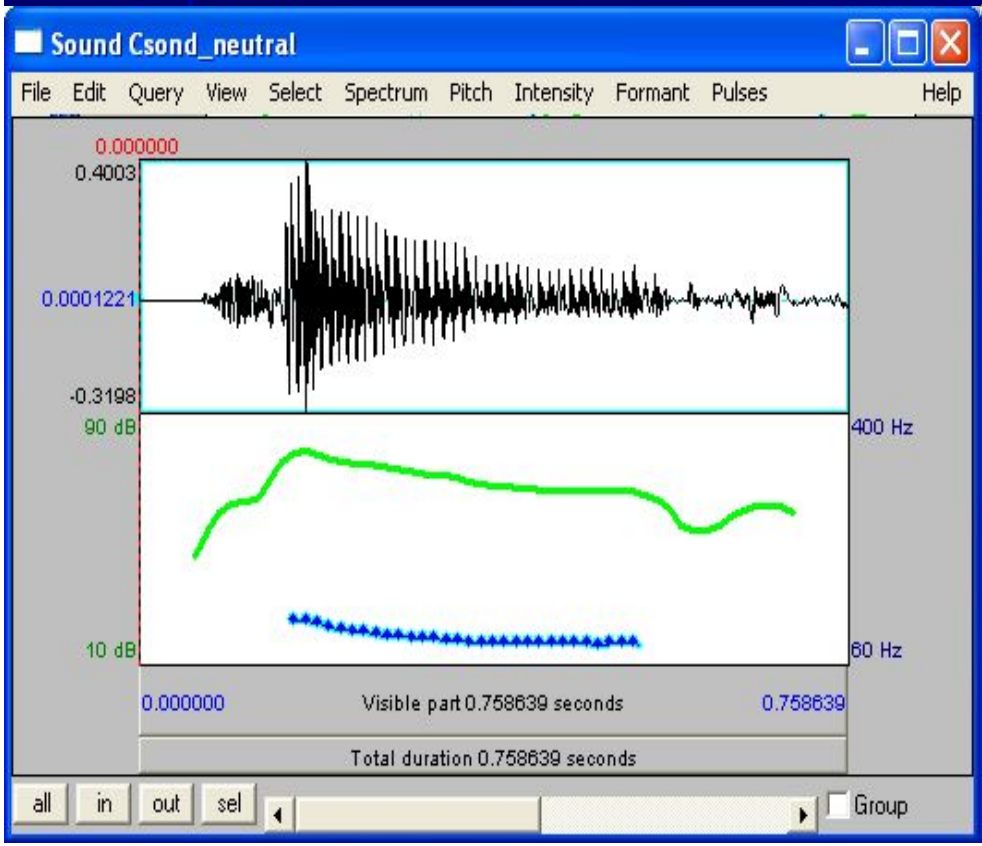


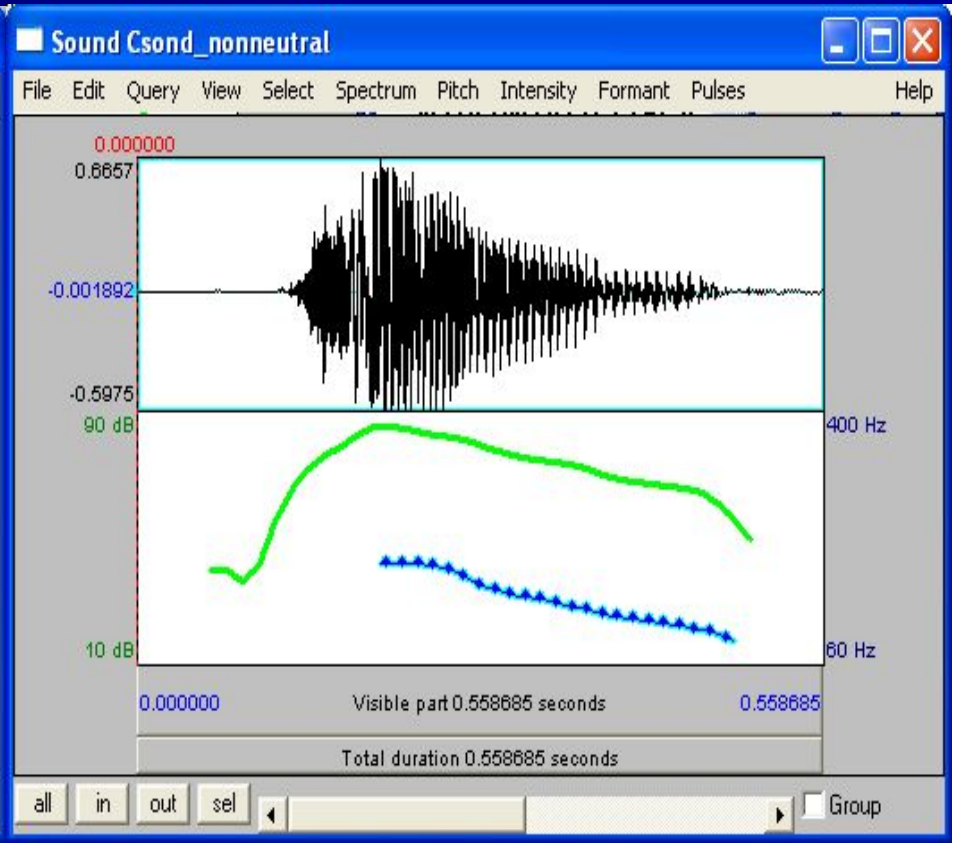
Results: Topics
4. example: *nyugalom*



Suprasegmental analysis: *csönd*

‘silence’ ‘shut up’

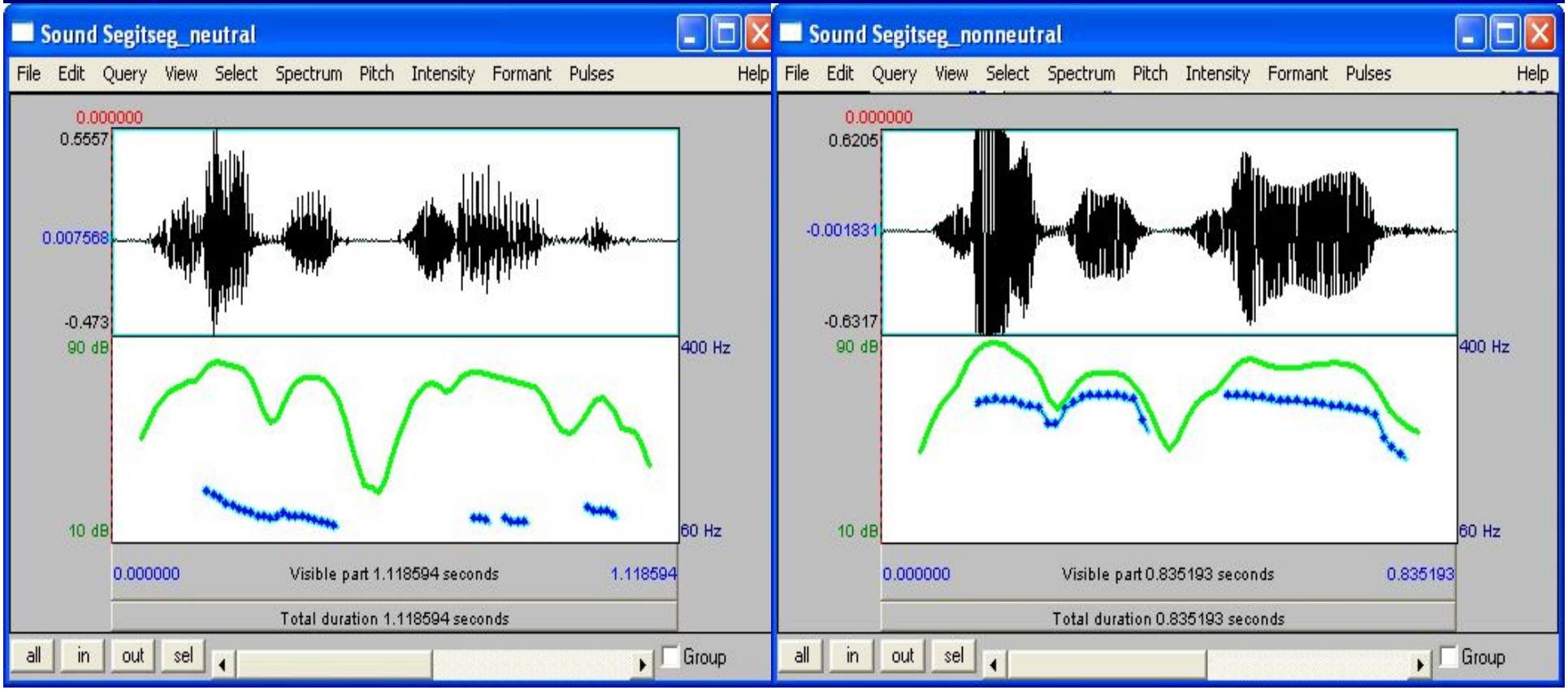




Suprasegmental analysis: *segítség*

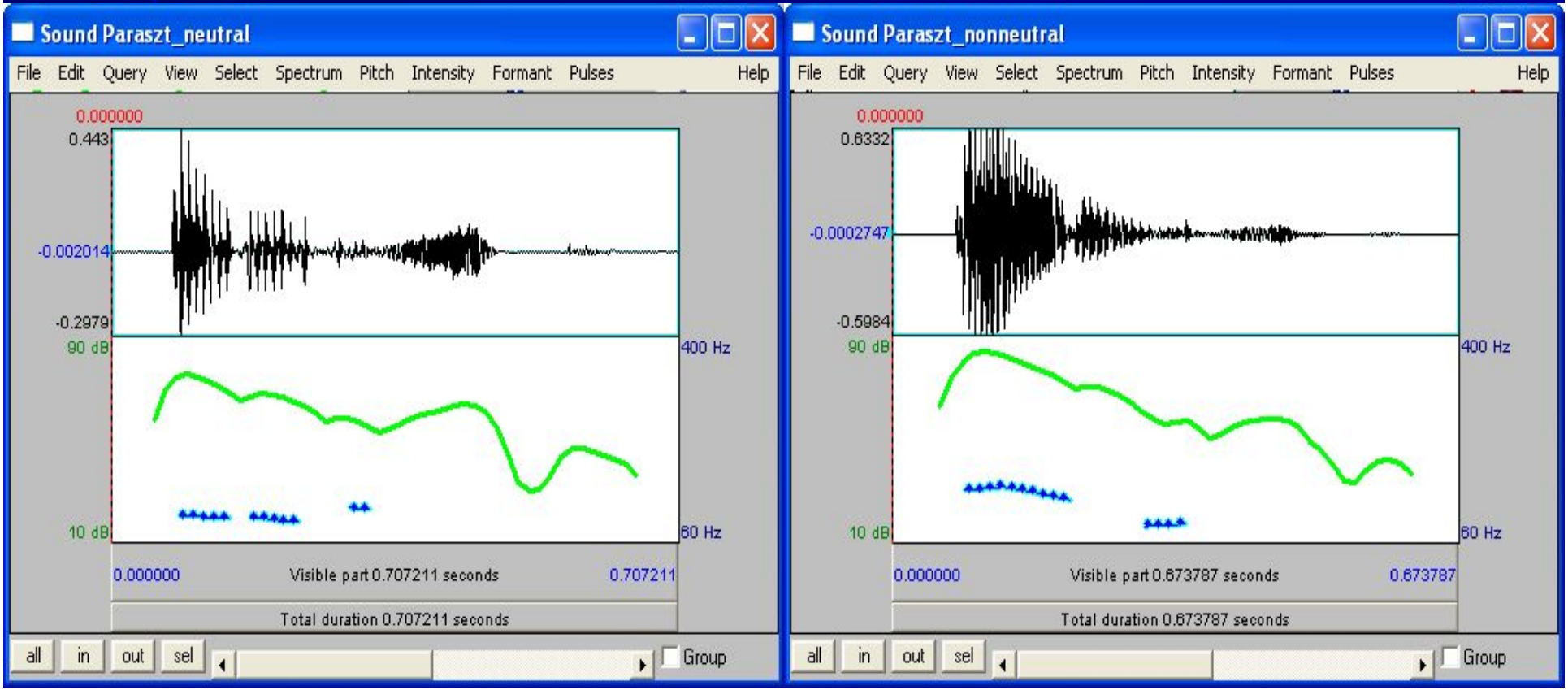
‘help’ (N)

‘help!’



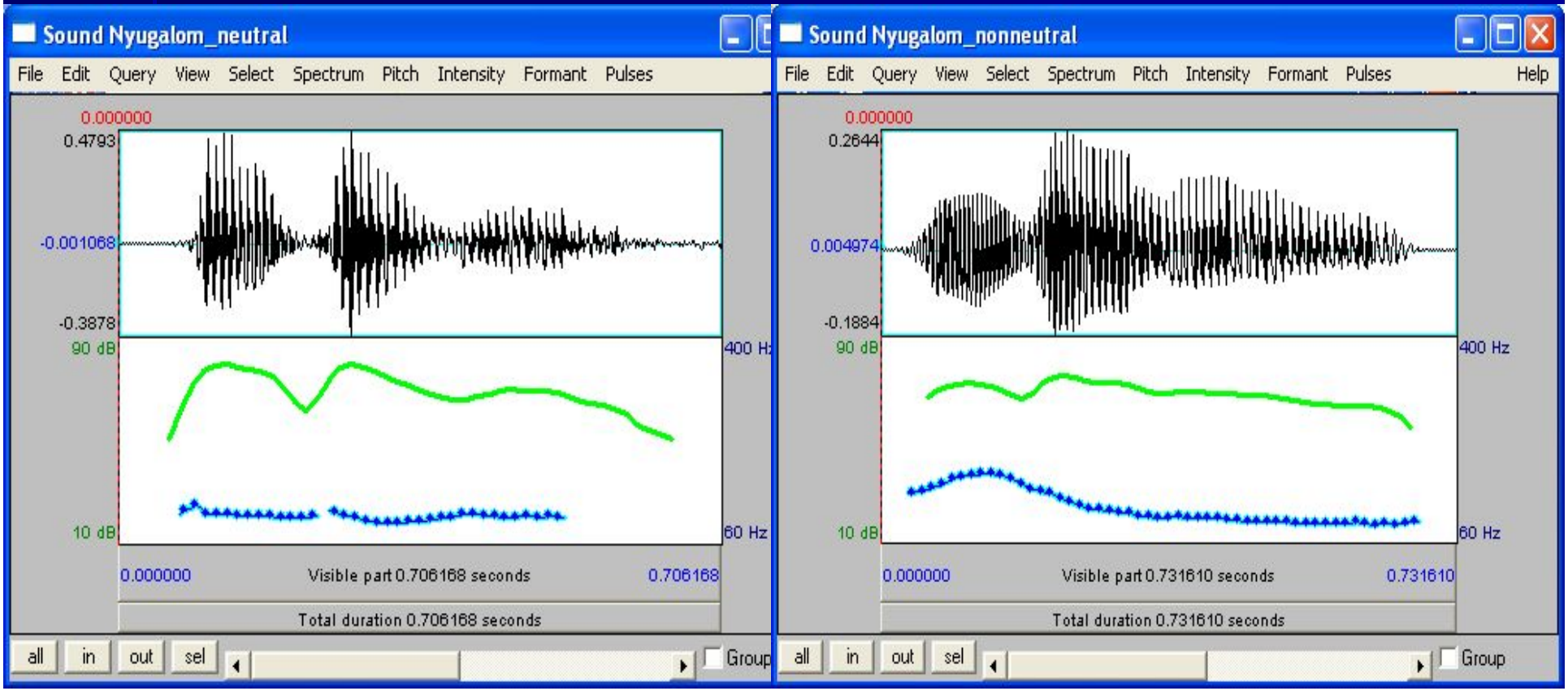
Suprasegmental analysis: *paraszt*

‘peasant’ ‘uneducated’



Suprasegmental analysis: *nyugalom*

‘stillness’ ‘don’t worry’



Conclusions: Reaction time

1. it is shorter if the suprasegmental structure of the stimulus is non-neutral
   ⇦ symbol of a situation
2. the only exception is *cica* ‘darling’
   ⇦ "personal"
3. the difference between neutral and non-neutral stimuli disappears in the "mixed" group
   ⇦ effects of the context

Conclusions: Number of items and words

1. it is greater in non-neutral cases
   ⇦ situational memory activation
2. differences are balanced or turned over in the "mixed" group
   ⇦ effects of the context

Conclusions: Suprasegmental structure

- there is no evident correlation between the "degree" of suprasegmental difference of (neutral and non-neutral) stimuli and responses
  ⇦ **suprasegmental stereotypes**
- the most affective factors are
  1. the **common pragmatic meaning** of the segmental and suprasegmental structure
  2. the **distance** between the meaning of the neutral and non-neutral units

Conclusions: Topics and categories

1. the thematic sets of responses depend on the stimulus
   ⇦ specific (pragmatic) meanings of the neutral and non-neutral realization
2. non-neutral stimuli: strict adherence to the original/neutral meaning vs. the associations conform to the non-neutral pragmatic meaning
   ⇦ the subjects' perceptual threshold for the suprasegmental features, instinctiveness and empathy
3. common features in the non-neutral responses: concrete situations (experiences, speaker, answers, etc.)

Summary

- stimuli with neutral and non-neutral suprasegmental structure gave different results
- the meaning is situational in non-neutral cases and lexical in neutral ones
- the results depend on
  – the integrated meaning of segmental and stereotypical suprasegmental structure
  – the perceptual threshold of the subject
  – the context of the stimulus

Further questions

- In those cases where the modified suprasegmental structure creates a new meaning, is the segmental and suprasegmental structure stored as one unit in the mental lexicon, or does the perception process the segmental and suprasegmental structure separately?
- What results would emotional (sad, happy, etc.) prosody bring?
- Etc.

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