PHONOLOGICAL FACTORS OUTRANK FREQUENCY EFFECTS: EVIDENCE FROM GREEK STRESS

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AIM:

To investigate whether speakers of a lexical stress system: (a) activate their internal stress-encoding mechanism when confronted with novel words, and (b) employ phonological filters in order to suppress lexical frequency effects

1. BACKGROUND

- Greek has morphology-determined stress. Stress is lexically-encoded and is assigned on the basis of a grammar-specific principle (e.g., headedness)
(Malikouti-Drachman & Drachman 1989; Ralli & Touratzidis 1992; Drachman & Malikouti-Drachman 1999; Revithiadou 1999)

- Three-syllable window: APU, PU & U stress

(1) a. θálasa /θalas-a/ b. θalasón /θalas-ón/
c. ánθropos /anθrop-os/ d. anθrópu /anθrop-'u /
Note: (1a-b) 'sea-NOM.SG/GEN.PL, (1c-d) 'man-NOM.SG/GEN.SG'

- The *phonological default* (=non-lexically inflicted stress) is on the APU syllable
(Malikouti-Drachman & Drachman 1989)

Problems with APU stress as the default:
- It is not the preferred stress pattern in reading tasks (Protopapas et al. 2006)
- It is marginal in suffixless words, e.g. acronyms (Revithiadou et al. 2011)

2. RESEARCH QUESTIONS

Q1: Which mechanism controls stress assignment in novel words?

In lexical stress systems, stress contrasts are engraved in the metrical representations of words in the Mental Lexicon
(cf. Peperkamp & Dupoux 2002; Dupoux & Peperkamp 2002; Peperkamp 2004; Dupoux et al. 2008; Vogel 2000; Altmann & Vogel 2002; Altmann 2006)

Expectation 1: Speakers are expected to activate their inherent stress-encoding mechanism when making stress decisions on novel words, thus producing lexically-determined stress patterns, and not the phonological default

Q2: What additional information is activated in such decisions?

Information on lexical frequencies is engraved in phonological grammars (Zuraw 2000; Hayes & Londe 2006). However, speakers may apply phonologically-grounded information and dispose of accidental generalizations (Becker et al. 2011)

Expectation 2: Phonologically-motivated generalizations constrain lexical frequencies

3. METHOD

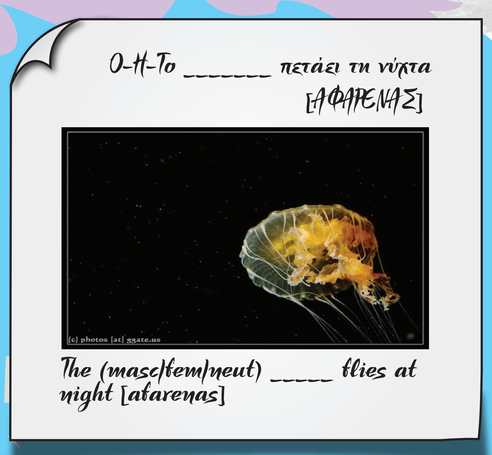
PARTICIPANTS

32 native speakers of Greek (28 females, 4 males); 21-45 years old; Mean age: 23 years old

PROCEDURE

Elicitation task: Read out 150 sentences each one including a pseudoword. There was no time restriction.

Data collected: 4800 items; 1600 of each word size



ITEMS

Factors controlled: (a) Type of inflection/morphological classhood, (b) Word size (2σ, 3σ, 4σ words)
50 items of each size, 10 items of each class (-os, -o, -a, -i, -as) ➡ 150 pseudowords

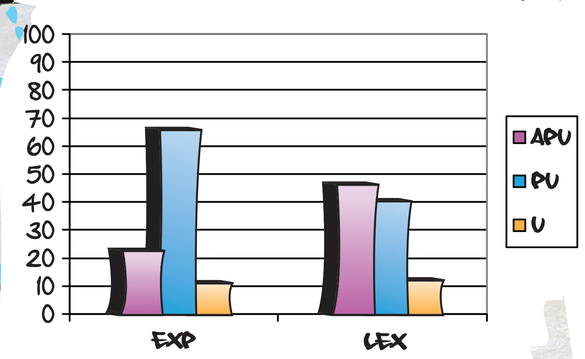
THE LEXICON

In order to unearth the effect, if any, of the statistical stress patterns of the Lexicon on speakers' productions, we looked at and codified the stress patterns of *inflected nouns* of the classes in question
(Source: The Anastassiadis-Symeonidis' On-line Reverse Dictionary, http://www.komvos.edu.gr/dictionaries/dictOnLine/DictOnLieRev.htm)

4. RESULTS

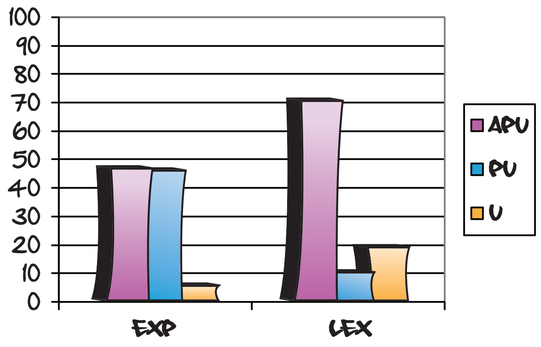
2σ nouns: PU » U (Exp & Lex)

Stress results in 3σ -as nouns (%)



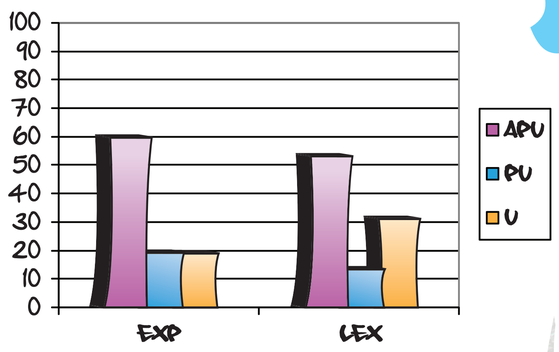
Exp: PU » APU (χ^2=66.322, p=.000)
PU » U (χ^2=121.170, p=.000)
APU » U (χ^2=11.782, p=.001)
Lex: APU » U (χ^2=39.035, p=.000)
PU » U (χ^2=29.369, p=.000)

Stress results in 4σ -o nouns (%)



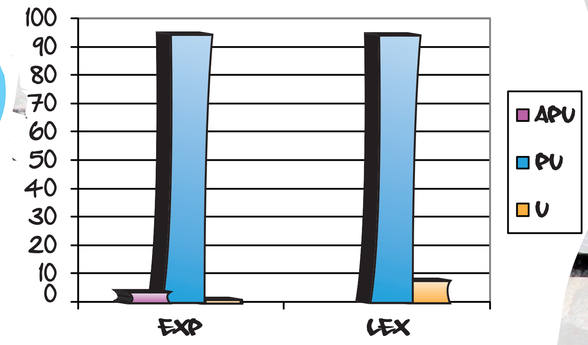
Exp: APU » U (χ^2=112.024, p=.000)
PU » U (χ^2=108.169, p=.000)
Lex: APU » PU (χ^2=69.143, p=.000)
APU » U (χ^2=40.500, p=.000)
U » PU (χ^2=6.400, p=.011)

Stress results in 3σ -os nouns (%)



Exp: APU » PU (χ^2=67.015, p=.000)
APU » U (χ^2=72.250, p=.000), PU = U (p>.1)
Lex: APU » PU (χ^2=63.391, p=.000)
APU » U (χ^2=14.940, p=.000)
U » PU (χ^2=19.208, p=.000)

Stress results in 4σ -i nouns (%)



Exp: PU » APU (χ^2=267.132, p=.000)
PU » U (χ^2=295.117, p=.000)
APU » U (χ^2=6.250, p=.012)
Lex: PU » U stress (χ^2=29.432, p=.000)

5. DISCUSSION

Expectation 1 is fulfilled: PU (lexically-inflicted) stress, and not the APU default, is the preferred output in the speakers' productions

➡ The lexically-driven accentual mechanism is enforced in novel words

Expectation 2 is fulfilled: Our results support a model in which speakers are not viewed as *blind frequency matchers* (Frazier 1995; Fodor 1998; Zuraw 2007). Phonological factors intervene and constrain statistical patterns (Becker et al. 2011)

More specifically:

1. Phonological factors filter lexical statistics

In productive morphological classes (e.g., -as), the effect emerges in the speakers' first choice stress pattern:

PU » APU » U (E) vs. APU » PU » U (L)

In less productive (inherited from AncGr) morphological classes (e.g., -os, -o, Anastassiadis 2011), the effect arises in the speakers' second choice stress pattern:

APU » PU » U (E) vs. APU » U » PU (L)

➡ Less fossilized morphological classes allow phonologically-grounded generalizations to take effect more forcefully than other classes

2. Phonological factors may introduce stress patterns which exhibit zero-level occurrence in the Lexicon. E.g., in 4σ nouns in -i, APU stress not only emerges as a stress choice but also outweighs the least preferred U stress contra to the dictates of the Lexicon:

PU » APU » U (E) vs. PU » U (L)

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