

Regularities and Oddities in Greek Binomials

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1 Introduction

The phenomenon of *End-weight* (henceforth EW) refers to the tendency of heavy or complex constituents to be found closer to the right edge of a phrase or sentence. While the first reference to EW (Quirk et al. 1972) was not within a phonological framework, more recent studies interpret the phenomenon as crucially associated with phonology, especially in the domain of constituent ordering within clauses (Anttila 2008, Anttila et al. 2010) and that of binomials (Ryan 2019a). The main claim behind the association of EW to phonology, and specifically prosody, is that there is an optimal alignment of heavier constituents and prosodic focus; constituents that pattern as heavy, are preferred closer to the right edge so as to coincide with the most prominent point of the prosodic phrase: nuclear stress (Selkirk 1995). This alignment encompasses the prosodically motivated manifestation of EW in particular, named *Prosodic End-weight* (Ryan 2019a) (here used interchangeably with EW) and seems to be in accord with other manifestations of the stress-weight interface (Gordon 2006).

Binomials have received significant attention as a domain of manifestations of EW. The term refers to structures consisting of two words that belong to the same word class and are often connected with a coordinator, such as *odds and ends* (Malkiel 1959:113). Schematically, a binomial is an *A and B* structure, with words, which are also called *items*, occupying the first (*A*) or the second position (*B*) within it. Generally, phonological factors which are associated with greater weight and are thus expected to be found in words that appear closer to the right edge include: longer, lower, or more back vowels, more syllables, more sonorous codas, more obstruent onsets (Cooper and Ross 1975, Ryan 2019a). Fixed binomial expressions in English that reflect these preferences include *trick or treat*, with a longer vowel in the second item, or *trials and tribulations*, with an item containing more syllables in the second position (Ryan 2019a:318).

Studies on EW manifestations have been mainly limited to languages such as English (Cooper and Ross 1975, Benor and Levy 2006, Ryan 2019a), with some work also having been conducted on a few other languages such as German (Oakeshott-Taylor 1984, Müller 1997), Afrikaans (Oakeshott-Taylor 1984), Hungarian (Pordany 1986), and Japanese (Lohmann and Takada 2014). To our knowledge, there has not been a relevant study for Standard Modern Greek (henceforth Greek). Greek is reported to be a language without attested weight effects, meaning that it could not have an active stress-weight interface. Indeed, stress occurs within the last three syllables of the word and is lexically or morphologically regulated (Malikouti-Drachman and Drachman 1988). The language also has a somewhat limited vowel inventory of 5 vowels: [i e a o u] and no distinction between short and long vowels. With regard to syllabic structure, processes such as onset maximization are reported to take place in syllabification (Selkirk 1984), with word- or morpheme-final codas re-syllabifying as part of the next onset (Kappa 2002), sometimes even violating the *Sonority Sequencing Principle* (Selkirk 1984, Morelli 1999). All in all, codas seem to be considered marginal (Malikouti-Drachman 1984, Setatos 1987), but generally accepted codas are limited and only include [s] and [n], and rarely [r] word-finally, and [r] and [l] word-internally (Kappa 2002).

This language profile would not seem like one that would be expected to manifest EW effects, but empirical observation suggests that Greek does include certain expressions and patterns that seem to mirror the patterns previously discussed as relevant to EW. Firstly, there are some echomimetic ablaut patterns with a back vowel in position B, e.g. [tsaf tsuf] 'the sound of a moving train' or [din don] 'the sound of a church bell.' Then, there are some fixed idiomatic expressions which feature a syllable-increasing pattern, such as [iθi ce 'eθima] 'morals and customs' or [pe'tsi ce 'kokalo] 'skin and bones.' Finally, recent studies on stress assignment in novel disyllabic acronyms have found a statistically significant tendency of word-final syllables with codas to attract stress (Topintzi and Kainada 2012, Revithiadou et al. 2015), a finding that could be considered relevant to known manifestations of the stress-weight interface.

Taking into account these observations, our study seeks to address the following: do the parameters of vowel quality, syllable count, and word-final coda presence influence the internal word ordering of binomials in Greek?

This paper includes details about our experimental design in section 2, the findings and discussion in section 3, details about our follow-up task in section 4, and our final conclusions in section 5.

2 Experimental study

Our experimental study included the formulation of two forced-choice tasks administered online in order to look into whether the circumstantial observations mentioned above reflect actual patterns, focusing on the parameters of vowel quality, final coda presence, and syllable count. Participants were monolingual speakers of Greek and were between the ages of 18 and 30. In both tasks, the participants were asked to read a sentence ending in a binomial connected by the coordinator [ce] ‘and’ and indicate which word order they preferred and deemed more natural, a task design similar to previous literature on the phenomenon (Bolinger 1962, Pinker and Birdsong 1979, Oden and Lopes 1981, Oakeshott-Taylor 1984, Parker 2002, Wright et al. 2005, Ryan 2019a). The first task utilized 68 novel real word binomials and was completed by 85 participants. So as to better grasp the phonological structure of the items, the second task was created using 86 nonce word binomials and was completed by a separate group of 86 participants. The sentences in each task, as well as the order in which the items of the binomials appeared, were randomized. It is important to note that the binomials used in both tasks were novel, and not fixed expressions. The items within a binomial were separately contrasted for our three parameters: the five vowels of the Greek inventory, the presence or not of a singleton coda word-finally, and lastly, the number of syllables, with disyllabic words being coordinated with tri- and tetrasyllabic ones. While for the first task the stress patterns of the items were not controlled for, in the second task all nonce words were stressed on the penult. Examples of sentences for each task can be found in (1) and (2) (with the targeted binomial underlined), while information about the number and distribution of items can be found in Tables (1) and (2).

(1) First task: targeting vowel quality contrast [e] and [u] in the stressed positions

Ανυπομονώ για το Πάσχα, μόνο και μόνο για να κάνει η μαμά τσουρέκια και κουλούρια.

[ani'pomo'no ja to 'pasxa 'mono ce 'mono ja na 'kani i ma'ma tsu'reca ce ku'lurja]

I can't wait for Easter, only because mum will make *Easter bread and cookies*.

(2) Second task: targeting singleton and null word-final coda

Οι δυο ασθένειες που θέρισαν τη χώρα τον περασμένο αιώνα ονομάστηκαν ντίβι και μπίγιρ.

[i 'ðjo a'sθenies pu 'θerisan ti 'xora ton pera'zmeno e'ona ono'mastikan 'divi ce 'bijir]

The two diseases that reaped through the country during the last century were named ['divi ce 'bijir].

Table (1) Number of participants and items per task

Task	Participants	Items
First: Real words	85	68
Second: Nonce words	86	86

Table (2) Number of items per parameter

Task	Vowel Quality	Syllable Count	Final Coda presence	Total
First: Real words	20	20	28	68
Second: Nonce words	30	20	36	86

3 Results and Discussion

Binomial distribution tests were conducted so as to check for statistically significant tendencies of items to appear in the second position of a binomial (Oden and Lopes 1984:676, Benor and Levy 2006:251, Mollin

2012:93). The test proportion was set at 50% which represents the null hypothesis, or that there is an equal, 50-50 chance of items to appear in the first or second position. The p -value was set at .05. Our results can be summarized in Table (3). The asterisk marks statistically significant results, that is $p < .05$.

Our results showed that there are statistically significant tendencies which seem to generally agree with previous literature on the internal ordering of binomial structures and our predictions for Greek: in the real-word task, constituents with more syllables, and word-final codas are found in position B in a statistically significant manner. The same significant tendencies are observed in the nonce-word task, with the vowel backness parameter also producing significant results. A closer look into these significant tendencies shed light into certain regularities and oddities regarding binomials in Greek.

Table (3) Results in percentages

In a binomial <i>A</i> and <i>B</i> , <i>B</i> has	First task: real words	Second task: nonce words
a back vowel	51%	53%*
a coda	53%*	52%*
more syllables	54%*	64%*

First, the parameter of vowel quality produced a statistically significant result in the second task with regard to vowel backness. Thus, the item with a vowel of a lower second formant frequency (F2), is more likely to occupy the second position within a binomial. Vowel backness is mentioned as a significant parameter in binomial ordering in the first comprehensive list of ordering parameters compiled by Cooper and Ross (1975) and has been found to be a significant factor in binomial ordering, though usually not independently from vowel height (Pinker and Birdsong 1979, Oakeshott-Taylor 1984, Benor and Levy 2006). Revisions of the parameter highlight instead that height should be considered important and backness can only be considered relevant when height is held constant (Cutler and Cooper 1978, Ross 1982). Indeed, more recent studies prioritize height, yet without discarding backness altogether. Ryan (2019a) interprets the importance of the vowel height parameter as a function of length; a lower vowel is crosslinguistically found to be intrinsically longer than a high one (Lehiste 1970), and thus it is a better candidate to align with nuclear stress, given the correlation between length and weight in quantity-sensitive (QS) systems. In this light, the finding of vowel backness and not height as a significant parameter in the internal ordering of Greek binomials is an interesting one. This prompts us to take a closer look to our vowel data from the second task. We conducted further binomial distribution tests on the 10 possible vowel combinations that can be produced with the Greek vowel inventory. Our results indicate that only 3 patterns produce statistically significant tendencies for a particular order: [a-o], [e-a], [o-u]. In Table (4) we can see those patterns and relevant binomials with the targeted vowels in the stressed positions and statistically significant results are marked with an asterisk.

Table (4) Vowel patterns of the second task

Pattern	% of occurrence	Example
[a-o]	57.4%*	μπάκεις και μπόκεις [ˈbɑcɪs ce ˈbɔcɪs]
[e-a]	56.6%*	τέσα και τάσα [ˈtesɑ ce ˈtɑsɑ]
[o-u]	56.6%*	γκόβας και γκούβας [ˈɡɔvɑs ce ˈɡuvɑs]
[e-o]	53.9%	τεκέσι και τεκόσι [teˈcesɪ ce teˈkɔsɪ]
[u-e]	52.3%	γκούθεις και γκέθεις [ˈɡɔθɪs ce ˈjɛθɪs]
[u-a]	51.1%	κοτούδος και κοτάδος [koˈtuðɔs ce koˈtɑðɔs]
[i-u]	50.5%	ντίχω και ντούχω [ˈdɪxɔ ce ˈduxɔ]
[i-e]	50.4%	κατίφα και κατέφα [kaˈtɪfɑ ce kaˈtefɑ]
[i-a]	50.4%	μπίνα και μπάνα [ˈbɪnɑ ce ˈbɑnɑ]
[i-o]	50%	κοπίγι και κοπόγι [koˈpɪjɪ ce koˈpɔjɪ]

While the pattern [e-a] could be explained by an interaction of vowel height and backness, the patterns in [a-o] and [o-u] resist such explanation. The former in fact only seems to be explained by vowel backness. To explain its emergence, one could perhaps suggest that, unlike vowel height, the vowel backness effect is not motivated by the stress-weight interface. Thus, it may be expected to arise in languages that lack phonological weight, at least categorically. Greek is among them (Kappa 2002). But that can't be a necessary prediction. Firstly, other patterns that could also be explained by backness, such as [i-a] and [i-u] did not produce statistically significant results. In cases such as [u-e] or [u-a], the order that could be explained by height is preferred, though not with a statistically significant tendency. The orders that would have been able to be explained by backness, [e-u] and [a-u] do not even reach the 50% mark. In addition, other languages which are also claimed not to have phonological weight, such as Hungarian (Pordany 1986), do not report vowel backness as a significant parameter. At the moment then, the emergence of this feature as significant remains rather unique and the motivation behind it mysterious.

Second, items with word-final codas were preferred in the second position of a binomial in both tasks. As previously mentioned, codas are generally considered marginal in Greek (Malikouti-Drachman 1984, Setatos 1987), a language that is said to follow processes such as onset maximization (Selkirk 1984). Generally accepted codas, at least word-finally, are limited and only include [s] and [n] (Kappa 2002). Since the targeted coda segments in our study were not limited in the generally accepted ones, we were able to observe that items with word-final codas seem to behave in a similar way, that is, consistently occurring in the second position of a binomial, regardless of their 'native' or 'foreign' status. We hypothesize that these findings point to codas being more tolerated within the language than previously claimed, at least word-finally, as they seem to behave in a systematic manner regardless their status in the grammar. We reach this claim with caution, however, since no acceptability tests were conducted for the nonce words of the second task. We could further hypothesize that coda bearing items appearing in the second position of a binomial can be interpreted as codas contributing to gradient syllabic weight. This would be in accord with the well-known fact that codas may render a syllable heavy, thus CVC > CV (e.g. Gordon 2006 and Ryan 2019b for a recent overview), on a categorical and/or gradient basis.¹ Indeed, when the items of a binomial both include a singleton coda, the one with the more sonorant segment is more likely to pattern as heavy and appear in the second position (Cooper and Ross 1975, Benor and Levy 2006, Ryan 2019a), yet a sonority effect was not obtained from our dataset. However, our present finding could be tied in with the results of Topintzi and Kainada (2012), and Revithiadou et al. (2015), both of whom independently found a statistically significant tendency of word-final closed syllables to attract stress in novel disyllabic acronyms. All these seem to point to the existence of an active stress-weight interface in Greek. This notion can be considered an oddity since it evidently goes against virtually all previous claims on the language, which treat it as lacking weight effects (Drachman and Malikouti-Drachman 1999 among many others).

Finally, the syllable count parameter systematically produced statistically significant results across the board, with words containing more syllables being preferred in the second position of a binomial. This finding is also consistent with previous literature on the parameter, which seems to be robust crosslinguistically (Cooper and Ross 1975, Kelly 1986, Müller 1997, Benor and Levy 2006, Mollin 2012, Lohmann and Takada 2014, Ryan 2019a). EW, especially in Ryan's (2019a) term, can easily account for this tendency, as more syllables are associated with more nuclei and thus greater weight; an item with greater weight is then better aligned with nuclear stress. A closer look into this pattern in Greek brings about another interesting finding. Remember that in the second task, all nonce words were stressed on the penult, which in turn limited the possible positions and distance of lexical stresses within a binomial. This systematicity allowed us to observe that lapse effects seem to lessen the effect of this parameter, an influence also reported by Bolinger (1962). A post-hoc Wilcoxon signed-rank test revealed a statistically significant lapse effect with trisyllabic words having greater tendency to appear in the second position than tetrasyllabic ones, $Z = -2.864$, $p = .004$. In other words, while the syllable count parameter is robustly observed in a nonce binomial contrasting an item of 2 syllables with one of 3, such as ['peka ce ka'meda], a binomial contrasting items with 2 and 4 syllables such as [fiko'reti ce 'feci] is preferred over ['feci ce fiko'reti]. The first, preferred option, presents the longer item occurring in the first position instead of the second, but also produces fewer lapses. The oddity with this tendency lies on the fact that it could be interpreted as a lapse amelioration strategy, even though Greek is

¹ Simplifying a bit, 'categorical' weight refers to weight distinctions made systematically in a language, as opposed to 'gradient' weight which is probabilistic in nature. See Ryan 2019b for discussion.

considered a language that is more tolerant of long stretches of unstressed syllables (Arvaniti 1994). In order to look into this accidental finding regarding syllabically uneven binomials, we constructed a follow-up task.

4 Follow-up task

For our follow-up task we maintained our basic design. We created a new list of a total of 50 sentences for our new forced choice task which was distributed online to a separate group of 80 participants of the same requirements. The items were focused on the syllable count parameter and the possible effects of lapse. This is the reason we utilized nonce words all of which were stressed on the penult; within each binomial, one item was constantly two syllables long, while the other varied among three, four, and five syllables long. The number and distribution of items per syllabic pattern can be found in Table (5).

Table (5) Number of items for follow-up task

Total	2 and 3	2 and 4	2 and 5	Fillers
50	12	12	12	14

(3) binomials coordinate a 2-syllable word with a 3-, 4-, and 5-syllable long word, respectively.

- a. ντόθι και καντόμι [ˈdoθi ce kaˈdomi]
- b. κάσο και μοτσακέλο [ˈkaso ce motsaˈcelo]
- c. λόσι και κεχαμορόλι [ˈlosi ce cexamoˈroli]

In (3), the binomials respectively feature three, four, and five unstressed syllables between stressed ones, while crucially, their transpositions [kaˈdomi ce ˈdoθi], [motsaˈcelo ce ˈkaso], and [cexamoˈroli ce ˈlosi] feature only two.

Our main result regarding the syllable count parameter is confirmed; items with more syllables have a significant tendency to appear in the second position. However, the results included in Table (6) indicate a general pattern of lapse influence on the internal ordering of syllabically uneven binomials in Greek. In other words, the syllable count parameter is observed in fewer cases when the short-before-long pattern co-occurs with a long stretch of unstressed syllables. The table below can lead us to the generalization that the longer a word is, the less likely it is to be found in the second position of a binomial. This tendency, however observable, is not statistically significant $\chi^2(2, N = 80) = 5.920, p = .52$. This lessening tendency supports (does not yet positively confirm) our speculation regarding the amelioration of lapses in Greek and brings forth the idea that lapse effects might be more relevant to the prosody of Greek than previously believed (cf. Arvaniti 1994).

Table (6) Results of follow-up task

Binomial syllable pattern	Short-before-long pattern observed %
2 and 3	63%
2 and 4	60%
2 and 5	57%

5 Conclusion

Greek seems to manifest EW effects and these manifestations seem to be generally, but not fully, consistent with previous literature on the phenomenon. As reported elsewhere, words with final codas and longer words are preferred in a position closer to the right edge. The same preference is found for words with back vowels, which is quite unusual, because typically vowel height is deemed to be a determining factor. The influence of lapse effects on coordination also seems to be somewhat relevant (cf. Bolinger 1962). An interesting observation is the fact that EW has been mainly studied for languages that are quantity-sensitive (QS), where weight effects can be observed. Prosodic and weight-related motivations have been discussed by Ryan (2019a) mainly for English, but their relevance for Greek is not certain, mainly due to the fact that

Greek is considered to be quantity-insensitive (QI), so it is not expected to manifest any weight effects (Kappa 2002) or have an active stress-weight interface (Gordon 2006). More recent experimental findings, however, such as those of Topintzi and Kainada (2012), and Revithiadou et al. (2015) illustrate patterns commonly associated with quantity-sensitive systems, namely, coda-bearing final syllables attracting stress. The results of the current study, especially regarding the final coda and the syllable count parameters, are also quite comparable to what would be expected of a language exhibiting (gradient) weight. In fact, it is quite possible that Greek should be added to the pool of languages which seem to lack categorical weight but entertain gradient weight. One similar case is Russian, which, like Greek, is weight insensitive for stress and instead possesses a famously complex lexical stress system. Yet, it demonstrates gradient onset weight, in that onset size correlates with stress (Ryan 2014). Onsets and their relevance to EW effects could pose an interesting domain of further research in Greek binomials especially given the fact that complex onsets are reported to be associated with the second item of a binomial in Hungarian (Pordany 1986) another allegedly quantity-insensitive (QI) language.

The present research teams up with the scant, more experimentally-oriented, work on Greek weight. More insights on a possible comparison of Greek to gradient weight systems and a more definitive answer regarding the nature of the language's weight system, require, among others, probabilistic designs, and the utilization of more experimentally derived data relevant to other known manifestations of the stress-weight interface. These are to be undertaken in future work.

References

- Anttila, Arto. (2008). Phonological constraints on constituent ordering. In *Proceedings of the 26th west coast conference on formal linguistics* (pp. 51-59). Somerville, MA: Cascadilla Press.
- Anttila, Arto, Adams, Matthew, and Speriosu, Michael. (2010). The role of prosody in the English dative alternation. *Language and Cognitive Processes* 25(7-9). 946-981.
- Arvaniti, Amalia. (1994). Acoustic features of Greek rhythmic structure. *Journal of phonetics* 22(3). 239-268.
- Benor, Sarah, and Levy, Roger. (2006). The chicken or the egg? A probabilistic analysis of English binomials. *Language* 82(2). 233-278.
- Bolinger, Dwight Le. (1962). Binomials and pitch accent. *Lingua* 11. 34-44.
- Cooper, William E., and Ross, John Robert. (1975). World order. In Robin Grossman, L. James San, and Timothy Vance (eds.), *Papers from the parasession on functionalism*, pp. 63-111. Chicago: Chicago Linguistic Society.
- Cutler, Anne, and Cooper, William E. (1978). Phoneme-monitoring in the context of different phonetic sequences. *Journal of Phonetics* 6. 221-225.
- Drachman, Gaberell, and Malikouti-Drachman, Angeliki. (1999). Greek word accent. In Harry van der Hulst (ed.), *Eurotyp, 4, Word Prosodic Systems in the Languages of Europe*, pp. 897-946. Berlin, Boston: De Gruyter.
- Gordon, Matthew. (2006). *Syllable weight: Phonetics, phonology, typology*. New York: Routledge Press.
- Kappa, Ioanna. (2002). Συλλαβική δομή [Syllabic structure]. Ms. <https://student.cc.uoc.gr/uploadFiles/177%CE%93%CE%9B%CE%A9%CE%A6153/3%CE%A3%CE%A5%CE%9B%CE%9B%CE%91%CE%92%CE%99%CE%9A%CE%97%20%CE%94%CE%9F%CE%9C%CE%97.pdf>
- Kelly, Michael H. (1986). *On the selection of linguistic options*. PhD dissertation, Cornell University.
- Lehiste, Ilse. (1970). *Suprasegmentals*. Cambridge: MIT Press.
- Lohmann, Arne, and Takada, Tayo. (2014). Order in NP conjuncts in spoken English and Japanese. *Lingua* 152. 48-64.
- Malikouti-Drachman, Angeliki. (1984). Syllables in Modern Greek. In Wolfgang U. Dressler, Hans Luschützky, Oskar Pfeiffer, and John Rennison (eds.) *Phonologica* 1984, pp. 181-187. London: Cambridge University Press.
- Malikouti-Drachman, Angeliki, and Drachman, Gaberell. (1988). Τονισμός στα Ελληνικά [Stressing in Greek]. *Studies in Greek Linguistics* 9. 127-143
- Malkiel, Yakov. (1959). Studies in irreversible binomials. *Lingua* 8. 113-160.
- Mollin, Sandra. (2012). Revisiting binomial order in English: Ordering constraints and reversibility. *English Language and Linguistics* 16(1). 81-103.
- Morelli, Frida. (1999). *The phonotactics and phonology of obstruent clusters in Optimality Theory* (Doctoral dissertation).
- Müller, Gereon. (1997). Beschränkungen für Binomialbildungen im Deutschen. *Zeitschrift für Sprachwissenschaft* 16(1/2). 5-51.
- Oakeshott-Taylor, John. (1984). Phonetic factors in word order. *Phonetica* 41. 226-237.

- Oden, Gregg C., and Lopes, Lola L. (1981). Preference for order in freezes. *Linguistic Inquiry* 12. 673–679.
- Parker, Steve. (2002). *Quantifying the sonority hierarchy*. PhD dissertation, University of Massachusetts, Amherst.
- Pinker, Steve, and Birdsong, David. (1979). Speakers' sensitivity to rules of frozen word order. *Journal of Verbal Learning and Verbal Behavior* 18(4). 497–508.
- Pordany, Laszlo. (1986). A comparison of some English and Hungarian freezes. *Papers and Studies in Contrastive Linguistics* 21. 117–125.
- Quirk, Randolph, Greenbaum, Sidney, Leech, Geoffrey, and Svartvik, Jan. (1972). *A grammar of contemporary English*. London: Longman.
- Revithiadou, Anthi, Nikolou, Kalomoira, and Papadopoulou, Despina. (2015). Stress in the absence of morphological conditioning: An experimental investigation of stress in Greek acronyms. *Journal of Greek Linguistics* 15(2). 187–234.
- Ross, John Robert. (1982). The sound of meaning. In The Linguistic Society of Korea (ed.) *Linguistics in the morning calm*, pp. 275–290. Seoul: Hanshin Publishing Co.
- Ryan, Kevin M. (2016). Phonological weight. *Language and Linguistics Compass* 10. 720–733.
- Ryan, Kevin M. (2019a). Prosodic EW reflects phrasal stress. *Natural Language & Linguistic Theory* 37(1). 315–356.
- Ryan, Kevin M. (2019b). *Prosodic weight: categories and continua* (Vol. 3). Oxford University Press.
- Selkirk, Elisabeth. (1984). *Phonology and syntax: The relation between sound and structure*. Cambridge, MA: MIT Press.
- Selkirk, Elisabeth. (1995). Sentence prosody: Intonation, stress, and phrasing. In John A. Goldsmith (ed.) *The handbook of phonological theory*, pp. 550–569. Oxford: Blackwell Publishing.
- Setatos, Michalis. (1987). Από τα Αρχαία στα Νέα Ελληνικά: Φωνολογικές αλλαγές [From Ancient Greek to Modern Greek: Phonological changes]. *Studies in Greek Linguistics* 8. 187–193.
- Topintzi, Nina, and Kainada, Evia. (2012). Acronyms and the placement of default stress in Greek. In *10th International Conference on Greek Linguistics (ICGL10)*, pp. 472–479. Komitini: Democritus University of Thrace.
- Wright, Sandra, Hay, Jen, and Bent, Tessa. (2005). Ladies first? Phonology, frequency, and the naming conspiracy. *Linguistics* 44. 531–561.