THE PRONUNCIATION OF UNFAMILIAR NATIVE AND NON-NATIVE TOWN NAMES

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ABSTRACT

This paper will discuss pronunciations of unfamiliar names, both British and foreign, by native speakers of English. Most studies which look at peoples' pronunciations of unfamiliar or pseudowords are based on English word-patterns, rather than a cross-language selection, while algorithms for determining the pronunciation of names from a variety of languages do not necessarily tell us how real people behave in such a situation. This paper shows that subjects may use different systems or sub-systems of rules to pronounce unknown names which they perceive to be non-native. If we wish to model human behaviour in novel word pronunciation, we need to take into account the fact that, while native speakers are not experts in all foreign languages, neither are they linguistically naive.

1. INTRODUCTION

As part of a study of the nativisation of names, an experiment was carried out which required subjects to pronounce unfamiliar European town names, presented either aurally or visually.

It had been found in pilot tests that native speakers of English varied their pronunciations according to the perceived language of origin of the name. For example, the invented written surname <Batin> was generally read aloud as ['ba.tɪn] when presented as an English name, but [ba.tɛ̃] when presented as French, though some names appeared to more amenable to manipulation than others. For the current experiment subjects were therefore asked to record which country they thought the town belonged to.

2. METHOD

Seventy town names were chosen from Britain, France, Germany, Greece, Italy and Norway, with 52 names to be studied and 18 fillers (some of these were familiar to the subjects). Where data from the filler names is of interest, this will be noted in the discussion. Morphologically transparent names were avoided, particularly among the more familiar languages, as their origins would have been too obvious, and they might have led to a larger than usual degree of pronunciation by analogy [3].

For written presentation, spellings from [6] were used; this determined, amongst other things, the transliteration of Greek [x] as <kh> rather than <ch>. For aural presentation, taped prompts were then made of the names. This was carried out by a single speaker, to reduce variation in pronunciation due to speaker characteristics rather than the characteristics of the names. Additionally, using different speakers would have made the language of origin of each name too obvious. As the subjects were to be Scottish, a phonetician from the East Coast of Scotland produced the prompts, so for the British towns the subjects would be expected to reproduce a local accent. (Where 'English' and 'non-English' are used to describe features of the prompts or the subjects' speech, it is important to remember that this refers to an accent of English with certain important differences from RP, such as the use of post-vocalic /r/ and the phoneme /x/). For the other town names in the experiment, the prompts were checked for acceptability in the native languages.

Ten native speakers of English (all from the Edinburgh area) read the names onto tape: five subjects repeated the names from the taped prompts, and five read them aloud from text. Subjects were not given any instructions as to the way they should pronounce the names, as the intention was to record their natural pronunciations. The answers were given in the sentence frame "Town is in Country", so as to record the subjects' linguistic judgements about the origin of the names, the English language context encouraging the subjects to nativise the names. Answers were chosen from a closed set of the six countries in the experiment.

3. RESULTS

Phonetic transcriptions were made of the results, and these were compared to the original prompts.

3.1. Phones and phonemes

There was some conflict between attempts to use foreign segments or foreign grapheme-to-phoneme correspondences, and nativisation processes.

3.1.1. Written prompts

Very few non-English segments were produced by the subjects in response to written prompts. The only clear examples were [ʁ] and [œ] in two instances of <Rötz> (Germany, [ʁœts] and [ɹœts] respectively). The only other examples which could potentially be classified as non-English segments are of doubtful

Oral stops		
p	Dieppe	2
t	Tallard	1
t	Toucy	4
t	Toulouse	1

Fricatives		
ʁ	Rötz	1
ʁ	Auxerre	1
ʁ	Laragne	1

Primary vowels		
u	Norddal	4
u	Karousadhes	4

Secondary vowels		
œ	Rötz	1

Nasal vowels		
ɔ̃	Valençay	1

Figure 1. Foreign phones reproduced by subjects from aural prompts, with numbers of occurrences.

segmental status, such as [ʦ] in 'Rötz' or 'Tsamandas' (Greece). Even if they were classified as affricates in their native languages, which is by no means uncontentious, it would be difficult to ascertain whether an individual response was intended by the speaker to be an affricate. If both parts of a potential affricate exist in English, they should not present any problems in combination unless that particular sequence either does not occur at all, or only occurs in certain environments.

There was evidence of awareness of different grapheme-to-phoneme correspondences in foreign languages, such as <W>→[v] for <Wolnzach> (Germany) and <J>→[j] for <Jaren> (Norway). It should be noted, however, that all five subjects placed 'Jaren' in Germany, so it cannot be determined whether or not they are aware that the same correspondence holds for Norwegian. This example illustrates the importance of recording the perceived language of origin of the names. Interestingly, the pronunciation [j] was only used once for <j> in <Bolkesjö>, (which all the subjects correctly assigned to Norway) and twice for [j] in <Evje> (assigned to various countries). (In the other responses it was pronunced as [dʒ], [ʒ], or omitted). More data would be needed to determine whether it was the language of origin or the word-position which determined the subjects' pronunciations.

There was also some overgeneralisation of features of familiar foreign languages to unfamiliar ones, as in two instances of [tʰ] rather than [θ] for <Th> in <Thessaloniki>; one subject thought the town was Norwegian and another Greek, suggesting that they were not consciously applying German or French pronunciation rules. Both these subjects spoke German but no other foreign languages. (This town was in fact a filler, but turned out to be unfamiliar to most subjects.)

3.1.2. Spoken prompts

The prompts (including the filler towns) contained 61 foreign sounds, giving 205 potential foreign sounds for 5 subjects. In fact, subjects repeated just 14 of these, shown in Figure 1.

Some of the sound changes made are of interest as they do not follow the usual principle of change to the nearest native sound (though, it should be noted,

	Non-native spoken prompt?		Non-native written prompt?		Country
#dj/_ɛ	**dj**ɛp	✓	**D i**eppe	✗	France
#kv	ˋ**kv**æˑɳɐˑs	✓	**K v**ernes	✓	Norway
#pf	ˈ**pf**inʦ.tʰa̲ːl	✓	**P f**inztal	✓	Germany
#ps	**ps**aˈxna	✓	**P s**akhna	✓	Greece
#ʃt	ˈ**ʃt**ɛ.la̲ʊ	✓	**S t**ellau	✗	Germany
#ʃv	ˈ**ʃv**ɛŋ.kʰə	✓	**S ch w**enke	✓	Germany
#ts	**ʦ**a.manˈda**ʦ**	✓	**T s**amandas	✓	Greece
bj/_o	ˈbɔ**b.bj**o	✓	Bob**b i**o	✗	Italy
bb	ˈbɔ**b.b**jo	✓	Bo**b b**io	✗	Italy
pp	koˈ**p.p**a.ɾo	✓	Co**p p**aro	✗	Italy
ʃʃ	ˈpe**ʃ.ʃ**a	✓	Pe**s c**ia	✗	Italy

Figure 2. Non-native sequences in the prompts (# represents a word-boundary).

"neither the speaker himself nor the linguist who studies his behavior is always certain as to just what sound in his native tongue is most nearly related to the model." [4], p. 215). For some of the more familiar filler names, some subjects appeared to be using English versions of the names rather than nativised versions of the prompts - all subjects produced [ˈɔz.ɬo] for [ˇus.lu] ('Oslo'), and one, after some hesitation, gave [mɾˈlan] for [miˈla.no] ('Milan').

A few errors could be attributed to perceptual confusion, such as two instances of [f] for [θ] in 'Thessaloniki' and [ð] for [l] in 'Loano'. This analysis is supported by a parallel experiment in which subjects were asked to write the names on the tape, rather than repeat them aloud; here, 4 out of 5 subjects wrote <F> rather than <Th> in 'Thessaloniki' and 3 gave <D> rather than <L> in 'Loano'. These particular prompts may not have been as clear as others, leading to a high number of errors; also, being word-initial there were fewer perceptual cues than in word-medial cases.

3.2. Phonotactics

There are a number of possible analyses according to whether certain features are classed as segmental or sequential. For example, [ʁ] in 'Bremen' ([ˈbʁe.mən]) might be analysed as a non-native segment, part of a non-native sequence, or both. For this discussion, only sequences which contain native sounds in non-native combinations are examined. As in the analysis above, sounds which could be analysed either as segments or sequences, such as the Italian long consonants, are taken to be sequences. Non-native graphemic sequences are not included in the analysis here unless they represent non-native phonetic sequences. There are 11 relevant sequences, given in Figure 2.

Categorisation of written sequences as native or non-native is not always straightforward; as some graphemic sequences may occur in English but only rarely, or in loanwords; in Figure 2, sequences have been marked as non-native if they occur only in loanwords, for example word-initial <Ps>.

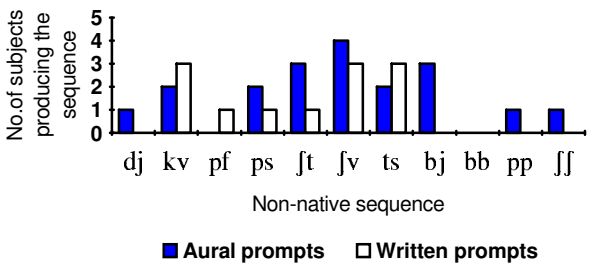

Figure 3. Non-native sequences produced by subjects.

Results for both experiments are shown in Figure 3. For both written and spoken prompts, more of the initial non-native sequences were produced than the Italian long consonants. More data would be needed to see whether this were due to the subjects' lack of knowledge of Italian, the low salience of these sequences, the structure of English, or another reason.

3.2.1. Written prompts

It had been expected that non-English phonotactics would not be used except where the sequence was familiar, as in the case of word-initial [ʃt] for subjects who knew some German. However, for all the names with non-English consonant clusters some subjects did produce the clusters correctly. Additionally, some subjects produced non-English clusters where they were not required, presumably by analogy with foreign languages they were familiar with, as in the pronunciation [#ʃn] rather than [#sn] for <Snåsa> in Norway. (The subject in this instance gave "Norway" for the country, which suggests he was not consciously attempting a German pronunciation.)

There were two instances of incorrect non-native sequences for <Schwenke>: [#sv] and [#ʃw]. As there are four consonants in a row, for which the only likely native pronunciations would be [sw] (which does not take into account the <ch>) or [#skw], from <#sch>/_V→[#sk], (which only applies before a vowel), it is not surprising that all subjects produced a non-native sequence. Additionally, this is a relatively well-known German sequence. <Kvernes> also elicited an incorrect non-native sequence, of [#gv], possibly due to voicing assimilation.

Unsurprisingly, graphemic sequences present in English, from languages unknown to the subjects (French and Italian) did not elicit non-native phonetic sequences. This is a further reason for the lack of Italian long consonants in the responses.

3.2.2. Spoken prompts

Overall more non-native sequences were produced from spoken prompts than written prompts, though there is not enough data here to be conclusive. It is interesting to note, though, that errors were still made even where it might be expected that reproduction of the sequence would be simple. For example, [ʃv] and [ʃt] are common word-initial sequences in German, are well-known through loanwords, and are easy for an English speaker to

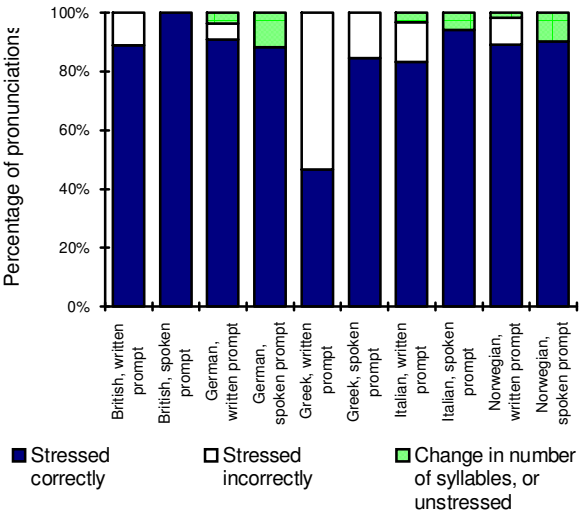

Figure 4. Multisyllabic towns stressed as in the language of origin - responses to written and spoken prompts (all towns included, but French omitted as it does not have lexical stress).

pronounce. Yet, despite the fact that all of the 5 subjects in this experiment rated their knowledge of German as average, one produced [ʃw] (also a non-native cluster) for [ʃv], and two gave [st] for [ʃt].

3.2.3. Types of process

Although some non-native sequences were produced, typical nativisation processes were also in evidence in both experiments:

- omission of one segment, e.g. initial [t] in [sə'man.das]
- vowel epenthesis, e.g. [ə] in [kə'vaɪ.nɛs]
- substitution of one segment to give a native sequence, e.g. [j] → [i] in [di'ɛpʰ]
- substitution of the sequence by a native segment, e.g. [dj] → [ʤ] in [ʤɛpʰ]

3.3. Stress

In general subjects in this experiment stressed the names as they would be stressed in their native languages (see Figure 4).

3.3.1. Written prompts

Baker and Smith [1] found that subjects used a combination of rules and analogy with other English words to determine stress patterns in nonsense words, but in cases where the words are thought not to be English, and are all names, it cannot be assumed that such a strategy would apply. Figure 5 shows that the majority of prompts, despite coming from a variety of languages, in fact follow similar stress patterns to English nouns, and subjects seem to be using these rules in their stress assignment. There were some notable exceptions, such as <Sollom> (Britain), which 4 subjects incorrectly stressed on the second syllable. Interestingly, the only subject who stressed the first syllable was also the only one who classed it as British. Greek had the highest percentage of names which in the original were not stressed according to English stress rules

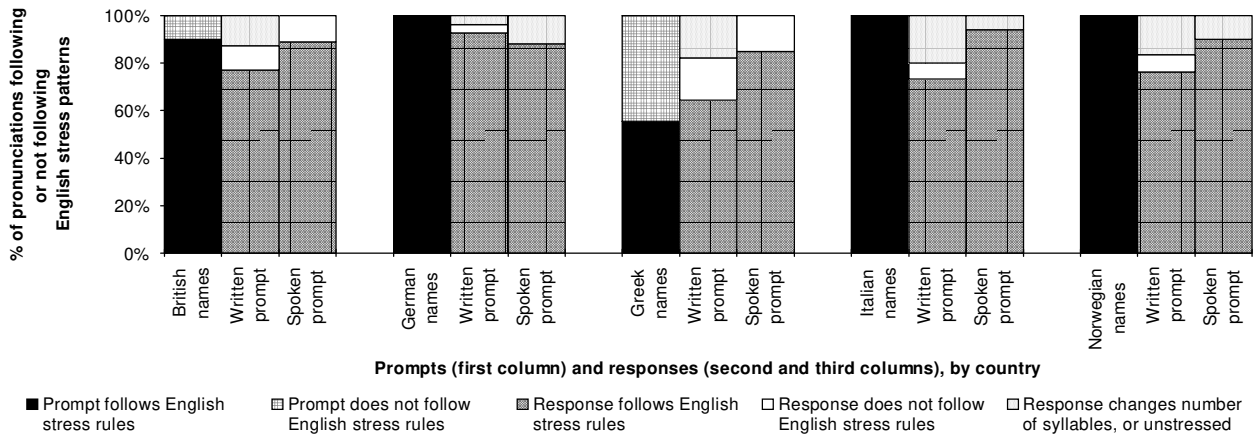

Figure 5. Percentage of names following English stress patterns (see [2]) in prompts and responses (all towns included).

(see [2]), and also incurred the most errors in responses to both written and spoken prompts (see Figure 4). The written prompt <Tsamandas> [tsa.man'das], for example, was stressed by all subjects on the heavy second syllable. (It should be noted, though, that Greek had the highest average syllable length, 3.22 compared to an overall average of 2.44, allowing for more error; it also appears to be more difficult to determine syllable weight from written prompts for longer names; this is a point for further research.) On the whole, towns which incurred the most disagreement across subjects did not have an obvious heavy/light syllable pattern in the written prompts, such as <Novoli> ['nɔ.vo.li] (Italy).

3.3.2. Spoken prompts

In the repetitions of spoken prompts, there were naturally fewer errors; there were 14 instances of changed syllable structure (for example, ['bɔb.bjo] → ['bɔ.bi.o]) but only 5 actual stress movements, both on Greek names. Three of these occurred on 'Korinthos', (['kɔ.ɾin.θɔs̱] → [kʰɔ'ɾɪn.θɔs]) which was a potentially familiar filler name, though the English version 'Corinth' is also stressed on the first syllable, and two on 'Psakhna', [psa'xna] → ['psax.na]. Both of these were changed to conform to the English stress rule, but more data is needed to see how common this change is, and whether it is caused by difficulty of perception or production.

3.4. Tone

No attempt was made to produce Norwegian tones. For the written prompts, this feature may not be well-known enough to be produced spontaneously. Although obvious in the spoken prompts, it may be considered part of the language, like intonation, rather than belonging to the word itself, and therefore inappropriate in an English sentence.

4. CONCLUSIONS

The subjects were correct about language of origin 44% of the time (not including fillers). This is substantially better than random guessing, though nowhere near Vitale's 96% accuracy in automatic language identification of surnames, which is higher than humans can hope for due to the input of sophisticated specialist knowledge. (It should also be noted that Vitale's name-set were randomly selected, and so included names with common morphemes, which were omitted from this experiment.) More names need to be studied to isolate the particular orthographic features which led the subjects to their judgements. Although the subjects were not wholly accurate in their pronunciations, it has been shown that they did not always pronounce the names using English rules, even for languages they were unfamiliar with. They produced some non-English segments and consonant clusters, and used non-English grapheme-to-phoneme correspondences; these were used in some cases appropriately, but in others they were overgeneralised to languages in which they do not apply, suggesting that the native language is not always the default for pronouncing unknown words.

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