DID THE 1993 ORTHOGRAPHICAL CHANGE EFFECT THE PRONUNCIATION OF THE CLOSE CENTRAL VOWEL IN ROMANIAN? THE PHONOLOGICAL PERSPECTIVE.

Dennis ESTILL

Ortografia limbii române s-a modificat în 1993. Argumentele pro şi contra acestei modificări s-au prezentat pe larg şi sunt deja bine cunoscute. Totuşi, după ştiinţa mea, nu s-au făcut studii serioase, care să analizeze mai atent perspectiva fonetică, cea mai relevantă până la urmă, deoarece limbajul este un element primar, afectând însuşirea unei limbi precum şi o pronunţie corectă în ansamblu, acest lucru referindu-se şi la mass media. Obiectul studiului este de a stabili dacă există elemente legate de ortografie, care ar necesita o examinare mai atentă şi, eventual, o corecţie, mai ales din perspectiva fonetică.
Studiul s-a bazat pe analizarea pronunţiei unor informatori români din diverse părţi ale ţării (inclusiv unul din Moldova) precum şi din mass media, bărbaţi şi femei. Din raţiuni comparative, în cazul a 5 informatori, materialul înregistrat a fost acelaşi pentru toţi, lecturarea fabulei lui Esop *Vântul dinspre miazănoapte şi soarele*, în timp ce restul materialului a fost ales aleator. Alţi informatori au fost selectaţi din mass media şi din alte categorii sociale. Vorbitorii au fost selectaţi cu grijă, luându-se în considerare data naşterii şi expunerea la o anume ortografie.
Rezultatele arată că normele ortografice din 1993 nu au afectat calitatea pronunţării vocalei centrale închise din orice perspectivă am analiza acest lucru. Totuşi, se pare că fonemul respectiv este pronunţat în medie mai lung dacă este grafiat [â], decât dacă este grafiat [î].

Cuvinte cheie: ortografie 1993, vocală centrală închisă, formanţi, lungime vocalică.

1. Introduction

Considerable adjustment was needed after 1993 in Romania after the orthographical change came into force and it was years before even the media (almost) totally accepted the new situation. Of course, Romanians were already used to seeing the diacritics left out of texts, but in the case of the orthographical change, for most Romanians who were born in the 1960s and later and who could not remember, or were not familiar with, the old system, the orthographical change of 1993 would now sometimes replace one grapheme with another. That is to say, under certain circumstances, observing rules that were perhaps hard for some to remember, /î/ became /â/.

The premises for and against the change were and have since then been discussed at length, nearly all of these arguments having been based on general historical-linguistic considerations, yet the conclusion reached by experts has been

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fairly unanimous: no scientific support for such a change has been brought forth. To the best of my knowledge no exhaustive studies have been carried out based on a phonetic-phonological approach. In view of the fact that spoken language is primary in the evaluation of language and the historical, written aspect secondary, decisions concerning the orthography ought to made more in the light of phonological than general linguistic information. The linguistic arguments are very well brought together and are clear in (Lombard, 1992), yet even Alf Lombard, the outside expert brought in by the Romanian Academy to assess the situation, does not consider the experimental phonetics case.

This article will examine the speech of a number of native Romanian speakers, mostly from the present period of time, but with some representation from the past. The prime objective will be simple, that is, to determine whether the pronunciation of the open central vowel has been affected by the orthography or not.

2. Preparation for study

The original plan was to divide the informants into two groups, those that had received their formal education under the earlier 1964 orthography and those that had received their formal education under the present 1993 orthography. This was found impractical because of the dearth of suitable recorded material, and it was decided to chose a mixed selection of informants, divide them into groups according to the quality of the material and study their results separately. The findings in this way would be just as reliable. The material used for the analysis consisted of recordings made at the Linguistic Campus of the University of Marburg (five informants, top quality), two news readers and a correspondent from Radio Romania (good quality), and an election address by Dinu Gheorghe (passable quality). The time frame for the recordings is a little more than ten years. First, however, certain important problems concerning the study and the material ought to be mentioned. In other words, the matter is not so simple: those educated in the years of the former orthography must have been greatly affected in their pronunciation by their parents and older acquaintances, and this would of course be conversely true of those who went to school after the orthographical change of 1993 had been made. Thus, the amount of interference of this type would vary from individual to individual and this supports the more qualitative type of study that I

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had decided to employ. More important still in his case is the fact that recordings of sufficient quality from the earlier period are simply not available, it seems, neither in the internet nor elsewhere. The quality of the material and variety of informant profile were therefore made the main considerations and the analysis approached from the angle based on the individual. That is to say, the object would now be to compare speakers of different profiles (and especially different ages) assuming that in essence pronunciation is a constant factor from the time it is learnt, unless deliberate attempts are made to alter this, which is a variable which cannot easily be taken into consideration in a study of this kind. In any case, at least the five Marburg informants must have known that the purpose was to present an accurate example of Romanian pronunciation and those in the public eye (the other four informants) had an obligation to use exemplary speaking styles. [1] Analyses were therefore made of formants 1 and 2 for all speakers and all vowels, and corresponding charts constructed on this basis. In this way the position of /â/ relative to /î/ for these informants was determined. Duration was also measured.

Table 1 below provides the available information on the informants.

Table 1. Available information on speaker-informants

Initials	**Gender**	**Place of birth**	**Age at time of recording**	**Profession**	**Year of recording**
cp	female	Bucharest	25?	unknown	2004
sr	female	Câmpulung Muscel	25	student	2010
mo	female	Lozova, Moldova	24	student	2010
sp	female	Piteşti	37	housewife	2009
fb	female	Sibiu	19?	student	2009
sc	male	Bucharest	47?	journalist	2012
ab	female	unavailable	25–30?	journalist	2012
ps	male	Dorohoiu, Botoşani	68	mathematician	2012
dg	male	Constanta	48	lawyer	2004

[1] Because informant *mo* was from Moldova is should be mentioned that it was only in 2005 that the Moldovan Romanian orthography was changed to conform with Romania. However, its has not been necessary to alter the basis for the choice of informants.

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The material used for the recordings in the case of the Marburg informants was a recitation of *Æ*sop's fable The North Wind and the Sun and two short sentences of introduction, which are shown below in Appendix A, in all, an average of approximately 240 tokens for all five informants. Part of a news bulletin (Radio Romania, 12 a.m. 27.7.2012) provided the recorded material for the two journalists and interviewee, 35 tokens (only the vowels /â/ and /î/ were considered), and a randomly chosen extract from an election campaign speech, provided the material for *dg*, 505 tokens. The acoustic measurements made using the Praat 5.143 program.

3. Methodology

Before making the calculations it was necessary to consider the accuracy and quality of the recorded materials. As far as the Marburg recordings go, only minor changes were necessary, and the wording was sometimes slightly different in the two short welcoming sentences in addition to the name. The texts were in a phonetically adapted form of the standard language. The quality of the *sp* recording was a little below that of the others, but certainly quite acceptable. The radio recording was of good quality, although there was slight background interference in the case of *ps*. The presidential address was not recorded under the best of conditions, yet the results are consistent and confirm the vowel pronunciation of *dg*. The main problem here is that it would seem virtually impossible to find better recorded material for the period under consideration and this was the best example that could be found.

The values for formants 1 and 2 were calculated as means from short slices in the vocalic nuclei in order to ensure that possible misleading peaks and troughs were eliminated. Separate vowel charts for each individual were compiled for the Marburg informants and *dg*. In the case of the radio material, the results were combined and only the close central vowel was studied. Those cases in which the verb *fi* included /u/ in the present tense were left out of the analysis because of their different graphemic form. The final results upon which the main conclusion was founded were based on the total means for all three categories and a comparison with the other vowels.

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4. Results

A breakdown of vowels analysed for the study as totals and percentages is shown in Figure 1.

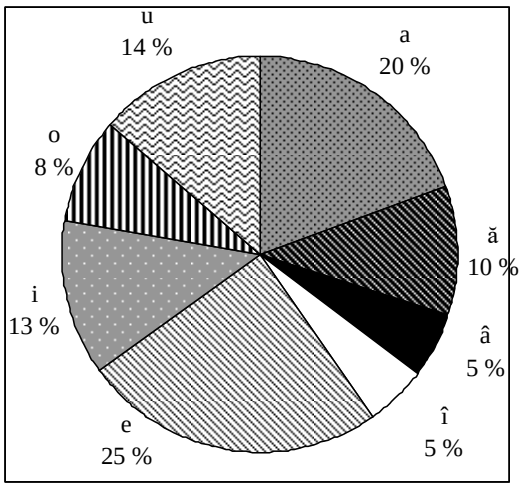


Figure 1. Breakdown of all vowel tokens measured in study as totals and percentages, according to the graphemes used in the 1993 orthography. â/ and /î/ are shown in plain black ad white.

The pie chart shows that the resulting vowel charts are based on an adequate sample of tokens for all vowels considered, with the vowel under consideration occurring 181 times in the material and evenly represented by the two graphemes /â/ and /î/. Since extra material was added for the sake of this study, the chart does not of course represent the frequency of occurrence of Romanian vowels as a whole.

The neat vowel charts that were produced fit in well with present conceptions. The chart shown as Figure 2 displays the difference in position of /â/ on the F_1 scale when compared to /î/. Bearing in mind the quality of the material and informant background this vowel chart well illustrates the pronunciation of

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present day Romanian.

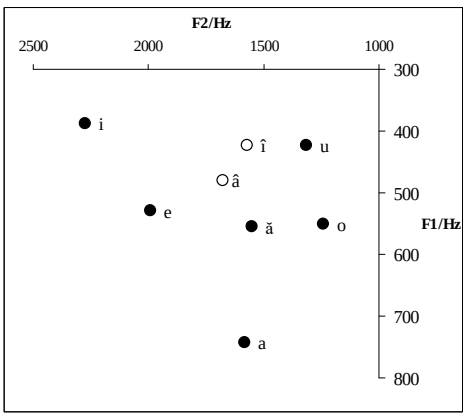


Figure 2. Romanian vowel chart based on measurements for five female informants. The two orthographical versions of the close central vowel are indicated in white.

It should perhaps also be added that there was very little variation between speakers, even if there was no essential difference in the pronunciation of /â/ and /î/ in the case of the youngest informant *fb*, which was an exception. In summary, the vowel chart for these informants produced no major surprises concerning the vowels as a whole, although when /â/ and /î/ are studied as possibly separate sounds, there is a difference in closeness that it is the intention of this study to examine more closely. Although, as previously mentioned, the quality of the *dg* recording was not as good as the Marburg files, the vowel chart based on these measurements was, in principle, the same as that for the five informants. This chart is displayed as Figure 3.

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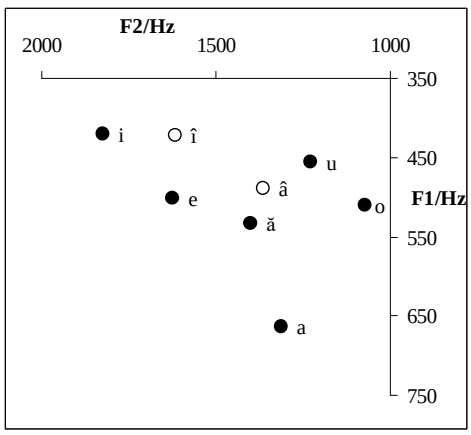


Figure 3. Romanian vowel chart based on the measurements for *dg*. The two orthographical versions of the close central vowel are indicated in white

The two orthographical versions of the close central vowel are indicated in white. The vowel chart for *dg* shown in Figure 3 fits in very closely with the values displayed in Figure 2. The obvious difference is with F_2. In this figure /î/ is decidedly more frontal, approaching /i/. Could this be an indication of orthographical interference in the case of a speaker who received his formal education during the period of the 1964 orthography? The reliability of the vowel chart in other respects would seem to confirm the nearness of /î/ to /i/ and the general tendency for a more open and central pronunciation of /â/. This could of course be a personal feature.

Figures 2 and 3 confirm the accepted placements of the vowels in the vowel chart for all six informants measured and it is not necessary to verify this any further. Figure 4 concentrates only on the close central vowel and its realisation in the case of the radio broadcast.

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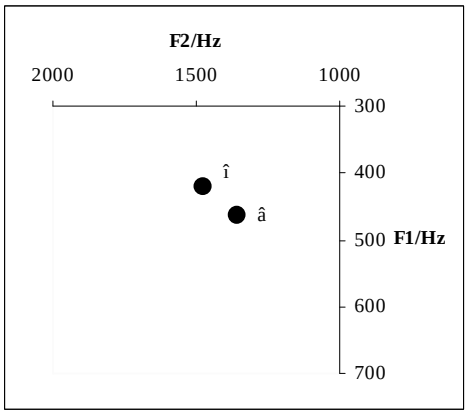


Figure 4. Placement in vowel chart of the close central vowel according to orthographical representation as pronounced by two Radio Romania news readers and one interviewee.

The resulting pattern in Figure 4 is reminiscent of the values for *dg* with a tendency for /î/ to be closer, and nearer to /i/ compared to /â/. Given this situation it might well be asked whether the pronunciation of /î/ is always more open in Romanian than /â/, although as Figure 2 shows, not necessarily nearer to /i/ in the vowel chart. This latter feature appears to be speaker dependent, since of the five Marburg informants only *sr*'s pronunciation was significantly nearer to /i/ (and at the same time more open compared to /â/) than /â/.

5. Questions that should be addressed

The evidence so far would appear to justify a conclusion that the central vowel has a closer articulation if it is represented in the orthography by /î/ than if it is represented by /â/. But drawing conclusions would be jumping the gun. There are in fact a number of factors that should be considered first before a definite statement on this matter can be made. These are considered below.

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5.1. Word-initial vowel behaviour in Romanian

The results described above without further investigation suggest that in Romanian the initial close central vowel when occurring as /î/ is almost always significantly closer than the same phoneme written as /â/. This study confirms such a conclusion, at least in the case of the majority of speakers, since there was one notable exception, *fb*, who was educated during the time of the 1993 orthography and for whom there was virtually no difference in the pronunciation of the two central vowel graphemes. On the other hand, there are certain variables that have still to be taken into consideration, and one of these is the general behaviour of vowels occurring in specific positions in the word.

The rules concerning the orthographical appearance of the close central vowel are as follows; if this vowel is at the beginning of, at the end of, or occurs in the middle of the word as the initial phoneme of a compound, it is written as /î/, for example, *îndeplini, coborî*, *bineînțeles*, otherwise the orthographic form is /â/, for example, *până*. As mentioned above, the present infinitive of the verb *fi* 'be' is an exception which was not considered in this study, because in the orthography this vowel is represented by /u/. It was decided to study the behaviour in general of all the other vowels in order to determine whether the same feature was true of these. That is to say, are all vowels closer if they occur at the beginning of the word?[1] In order to resolve this question the Marburg material was calculated and the results are summarised in a chart showing the of both the initial vowels and non-initial vowels for all five informants. These are shown below as Figure 5.

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Figure 5. Vowel chart showing Romanian vowels both at the beginning of the word (vowel followed by a hyphen) and elsewhere in the word based on the measurements of five informants. The two orthographical versions of the close central vowel are indicated in white. /ă/ is missing from the chart because there were no examples of this vowel, which is seldom in initial position, in the material.

[1] In this study only occurrences of the close central vowel as the initial phoneme were studied, since the material did not include examples of this vowel in other positions. In comparison, examples of this vowel occurring in a position other than initial are not so common.

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The chart shown as Figure 5 is crucial to understanding the pronunciation of the close central vowel. It clearly demonstrates that in Romanian irrespective of the orthographical system to which a speaker has be subjected in childhood and early adolescence, all vowels with the exception of /a/ will be closer if they are in initial position. The chart shows the combined totals for all five informants, but not the variation between speakers, which is relevant to this study. Yet, in examining individual charts it was found that all follow the same pattern. Looked at individually all initial vowels with the exception of /a/, for which F_1 and F_2 were almost invariably the same, were closer than their counterparts. By definition /â/ occurs in the middle of words and, in the case above, /î/ is always found at the beginning of the word, so in this respect these two graphemes still represent one sound, and operate in precisely the same way as other vowels, which in the figure are split into two groups, initial and non-initial. This chart demonstrates that the closer position of the initial vowel is perfectly normal.

5.2. Possible effects of overlap

Overlap could play some part in changing the quality of /î/ (Estill, 2015). In the material analysed /î/ was followed by /n/ three times out of four and in the case of /n/ a coefficient of 1.06 was calculated for anticipatory overlap for F_1 and 1.03 for F_2. As Figure 6 indicates, adjusting for anticipatory overlap caused by /n/ brings /î/ (which becomes *î adjusted* in Figure 6) nearer to /â/, although it still remains closer in the vowel chart than /â/. It can therefore be asserted that although the anticipatory overlap caused by /n/ has the effect of raising formant values, this is not strong enough in the case of the close central vowel to reverse its position relative to /â/ and the pattern remains consistent with the other vowels as shown in Figure 5.

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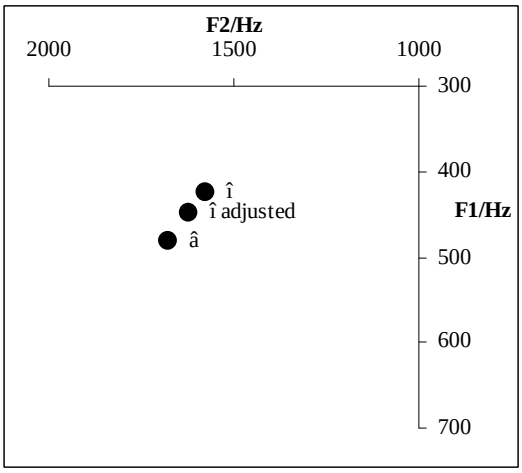


Figure 6. New position of /î/ (î adjusted) compared to /â/ and /î/ in Romanian vowel chart after allowance has been made for anticipatory overlap caused by /n/. Results based on Marburg informant totals.

This means that overlap is evidently a contributory factor in raising the frequencies of F_1 and that this cannot be ignored in the case of /î/, since it cuts the distance to /â/, as it were, by half on the F_1 scale. It should be observed that /î/ is the only example of this feature.

5.3. Possible effects of stress

Another factor that ought to be taken into consideration is stress, and in particular word stress. In order to determine the part played by word stress in the pronunciation of vowels in Romanian the differences in formant values between stressed and unstressed vowels was compared for the five Marburg speakers and the results appear below in Figure 7.

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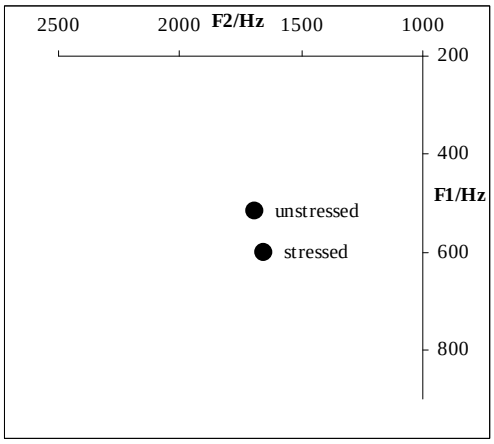


Figure 7. Position in Romanian vowel chart of stressed and unstressed vowels as totals for all vowels for five informants based on 558 unstressed and 338 stressed tokens in polysyllabic words.

Monosyllabic words were not included in the experiment because of the problems related to resolving the extent to which they may or may not represent word or sentential stress, that is, whether to classify them as stressed or unstressed. The results shown in Figure 7 provide an unequivocal answer to the problem of stress effect: in Romanian unstressed vowels are regularly and significantly closer than stressed vowels, while there is little or no change in F_2 values. This chart is almost identical with the individual charts for all informants, although there was some slight variation on the F_2 scale. This being the case it is safe to say that lack of stress is a factor in Romanian if not elsewhere that raises F_1 values and makes vowels closer. In general the initial /î/ is unstressed because it is so often formed from a prefix, as it was in the material used in this research, whereas /â/ is nearly always stressed, again, as it was in this material (with the exception of one instance). Therefore, /â/ can be treated as stressed and /î/ as unstressed. In summary, the position in the vowel chart of /î/ relative to /â/ is also determined by stress factors, and this has the effect of heightening its position in the vowel chart.

5.4. The enigma of vowel length

Until now this discussion has concerned the quality of vowels as reflected in the formants. However, in considering difference in durations, it becomes evident that, in this respect, /â/ and /î/ display different lengths. /â/ is regularly much

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shorter than /î/ in the material studied. This can be seen from the chart shown as Figure 8, which is based on the information from the Marburg informants.

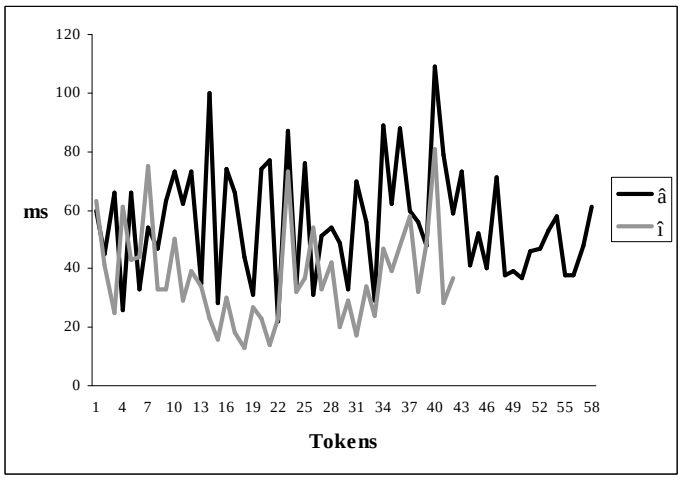


Figure 8. Vowel durations for the graphemes /â/ and /î/. The grey line representing /î/ is regularly below the black line representing /â/. The means are /â/, 56 ms and /î/, 37 ms.

On the other hand, although /î/ is word initial in the examples and /â/ is non-initial and difference in vowel length is evident, no such distinction can be found in connection with the other vowels, and the figures for these were 68 ms (non-initial) and 64 ms (initial) that is, there is no relationship between word-initialness non-initialness in terms of length of vowels in general other than the difference associated with /â/ and /î/. Duration of course does not directly effect the quality of the sound, but there could still be a tendency for speakers to extend the length of /â/ simply because in this case a different grapheme to /î/ is employed. This analogy hypothesis has not been established and this author would be happy if other phonologists were to make their own calculations.

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6. Conclusion

The foregoing clearly establishes that, from the point of view of quality, the graphemes used today for the close central vowel in Romanian do not affect and have not affected pronunciation. In the opinion of this author the 1964 orthography was better adapted to the Romanian language than the orthography now used, but changing history would be a very expensive undertaking subjecting the population to another spell of re-education, and so things will probably remain as they are. The reasons for this conclusion have been outlined above: the close central vowel acts in the same way as other vowels when in initial position, that is, /î/ is closer than /â/, although overlap plays an important part in the difference of quality, in the instance of /â/ and /î/ its effect is negligible, and the effect of stress on the close central vowel is exactly the same as on any other vowel. However, it does seem that there could be a difference between the length of the graphemes /â/ and /î/ in the pronunciation of these sounds. In a nutshell: there is no difference in quality, but the present orthography could have lengthened the closer pronunciation of the close central vowel. Let us hope this article helps to put an end to the main discussion concerning the question which is the title of this article.

Acknowledgement

I should like to thank the University of Marburg for allowing me to use the recorded material of five Romanian speakers which, in turn, made this study possible.

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Lombard, Alf (1992). *Limba română,* nr. 10, p. 531, Despre folosirea literelor î și â.

Appendix

The North Wind and the Sun. Romanian version.

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Vântul de nord şi soarele se certau care din ei e mai puternic când un călător apăru înfăşurat într-o haină groasă. Au hotărât că acela care reuşeşte primul să-l facă pe călător să îşi scoată haina trebuie considerat mai puternic decât celălalt. Atunci vântul de nord suflă cât mai tare putu, dar cu cât sufla mai tare, cu atât călătorul înfăşura mai tare haina în jurul lui; şi în cele din urmă vântul de nord renunţă. Apoi soarele străluci puternic şi imediat călătorul îşi scoase haina. Şi astfel vântul de nord fu obligat să recunoască faptul că soarele e cel mai puternic dintre ei doi.

Sententences of introduction (with slight variations):

Le urez bun venit tuturor participanţilor acest curs de linvistică. Numele meu e ... şi vorbesc româneşte.

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