

The negative of the Turkish aorist and the challenges it poses during acquisition

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1. Introduction

The question of whether symbolic rules or usage conditioned by frequency are implicated in linguistic cognition has been investigated in the language acquisition for the past two decades (Bybee 1995, 2006; Hahn et al. 1998; Marcus et al., 1992; Marcus 1998, 2001; Pinker 1999, 2001; Plunkett and Marchman 1993; Rumelhart and McClelland 1986; Yang 2002; among others). Investigation of the path children follow in the acquisition of irregularities in morphology has proven to be a broad research domain for an understanding of mental representations for morphemes, in particular whether they implicate absolute rules or are products of learning where frequency effects play a role.

This paper examines how Turkish speaking children acquire the negative of the Turkish aorist. The irregularity exhibited in the negative of aorist can pose problems during acquisition and provide insights about presence/absence of rules in language acquisition.

2. The issue

In Turkish verbs which are attached various Tense/Aspect/Modality (TAM) markers are negated in the following fashion. The verb root is first attached the negative marker {-mA}, which is then proceeded by a TAM morpheme. The person marker appears as the last morpheme in the sequence as in (1):

(1)	Verb root +	-mA +	TAM	+ Person Marker	
	<i>git</i>	<i>-me</i>	<i>-di</i>	<i>-m</i>	'I did not go'
	<i>git</i>	<i>-me</i>	<i>-miş</i>	<i>-im</i>	'Apparently I did not go'
	<i>git</i>	<i>-me</i>	<i>-yeceğ</i>	<i>-im</i>	'I will not go'
	<i>git</i>	<i>-mi</i>	<i>-yor</i>	<i>-um</i>	'I am not going'

The Turkish aorist, however, when negated departs from the pattern that can be extracted in (1) whereby the TAM slot appears to be left unoccupied in the presence of some person markers and filled with the morpheme {-z} in some others as in (2):

(2)	<i>ver-me-m</i>	'I do not give it'
	<i>ver-me-z-sin</i>	'You do not give it'
	<i>ver-me-z</i>	'S/he does not give it'
	<i>ver-me-yiz</i>	'We do not give it'
	<i>ver-me-z-siniz</i>	'You do not give it'
	<i>ver-me-z-ler</i>	'They do not give it'

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In particular, the negative aorist marker {-z} attaches directly to the negation marker in 2nd and 3rd person singular and plural forms:

- | | | |
|-----|-----------------------|-----------------------|
| (3) | <i>ver-me-z-sin</i> | (2nd person singular) |
| | <i>ver-me-z</i> | (3rd person singular) |
| | <i>ver-me-z-siniz</i> | (2nd person plural) |
| | <i>ver-me-z-ler</i> | (3rd person plural) |

In 1st person singular and plural forms, however, there is no TAM marker between the negation marker and the person marker as in (4):

- | | | |
|-----|---------------------|-----------------------|
| (4) | <i>ver-me-Ø-m</i> | (1st person singular) |
| | <i>ver-me-Ø-yiz</i> | (1st person plural) |

In this study, we predict that this peculiarity in the distribution of the negative of the Turkish aorist may prove to be challenging and children may experience problems in acquisition. The questions we have aimed to address in this study are as follows:

- (i) What is the path Turkish-speaking children follow during the acquisition of the Turkish negative aorist?
- (ii) Does the irregularity surfacing in 1st person singular and plural forms cause errors in acquisition?
- (iii) The suffix that surfaces in the negative of the aorist marker is {-z}. No such specific affix is used, however, with other TAM markers. Given this observation, would children generalize what they do with other TAM morphemes to aorist and attempt to attach $\{-(A/I)r\}$ to the negation marker $\{-mA\}$ as it is the case in negation with other TAM markers?
- (iv) The negative marker used in the aorist can be considered as $\{-mAz\}$ rather than $\{-z\}$? Is there any evidence suggesting that this is so?

3. Predictions

The distribution of the aorist discussed above suggests that the mastery of the structure at issue cannot be easy hence Turkish speaking children are unlikely to have an errorless path in the acquisition of the negative of the aorist. We predict that in acquiring this particular form, Turkish-speaking children may entertain certain hypotheses.

- (i) In acquisition, the presence of {-z} in 2nd and 3rd persons and its absence in 1st person can be a challenge for children. Since the {-z} affix is used in 2nd and 3rd person forms, Turkish-speaking children may overgeneralize and use {-z} in 1st person singular and plural forms as well. This may lead to errors as in (5):

(5a)	* <i>gel-me-z-im</i> for <i>gel-me-m</i>	‘I do not come’
(5b)	* <i>gel-me-z-iz</i> for <i>gel-me-yiz</i>	‘We do not come’

(ii) As a child acquiring Turkish would observe, when verbs are negated in contexts where they occur with TAM markers other than the aorist, the TAM follows the negation. Having made this observation the child may have a tendency to use the aorist marker $\{- (I/A)r\}$ in the negative as well. This would lead the child to make errors as in (6):

- (6a) **gör-me-r-im* for *gör-me-m* 'I do not see'
- (6b) **gör-me-r-sin* for *gör-me-z-sin* 'You do not see'

(iii) Children may also have a tendency to drop the morpheme $\{-z\}$ in all negative forms of the aorist marker. When they drop it, the outcome would be *alma-im* for 1st person singular. As two consecutive vowels are impermissible in Turkish, the buffer /y/ has to be inserted, as a result of which the form *al-ma-m* 'I do not buy it' may be produced as **al-ma-yım*.

(iv) Since the aorist marker does not reveal itself in the negative form, the child may assume that there should be $\{- (I/A)r\}$ attached to the verb. Furthermore they may treat $\{-mAz\}$ as a chunk yielding errors as in (7):

- (7a) **gül-er-mez-im* for *gül-me-m* 'I do not laugh'
- (7b) **gül-er-mez* for *gül-me-z* 'S/he does not laugh'

With these predictions in mind, in the next section we lay out the procedure of this study.

4. Procedure

4.1. Participants

The participants of this study were 40 children from two different age groups and 4 adults (constituting the control group). The age range and the mean age of all the participants are given in Table 1. The children in this study were recruited from Boğaziçi University Daycare Center and Bakırköy Hospital Daycare Center.

Table 1. Participants

Age Group	Age Range	Mean Age
G1 (n=26)	2;2–3;5	2;9
G2 (n=14)	3;6–5;10	4;3
Adults	20	

4.2. Materials and method

The stimuli used in the experiment consisted of pictures to elicit how Turkish speaking children produce the negative of the aorist marker. The children were asked questions in two different grammatical contexts which required the use of negative of the aorist in the answer. By using elicitation technique, children were shown pictures and were expected

to answer the questions related to the pictures. The grammatical contexts and some sample questions children were asked are given below:

- (i) Context which requires the use of various person markers with the negative of the aorist:
- a. *Bak bu çocuk sörf yapıyor. Sen de sörf yapar mısın?*
 ‘This boy is surfing. Do you surf as well?’
 Expected Answer (EA): *yap-ma-m* (1st person singular)
 ‘I do not.’
- b. *Ben kurbağaları hiç sevmem. Sence ben bu kurbağayı öper miyim?*
 ‘I do not like frogs. Would I kiss this frog?’
 EA: *öp-me-z-sin* (2nd person singular)
 ‘You would not.’
- c. *Yazın hiç kar yağar mı?*
 ‘Does it snow in summer at all?’
 EA: *yağ-ma-z* (3rd person singular)
 ‘It does not.’
- d. *Annen ve sen bu pastayı bu yaramaz çocuğa verir misiniz?*
 ‘Would you and your mother give this cake to this naughty boy?’
 EA: *ver-me-yiz* (1st person plural)
 ‘We would not.’
- e. *Annem ve ben bu güzel çiçekleri hiç koparır mıyız?*
 ‘Would my mother and I pull these flowers?’
 EA: *kopar-ma-z-sınız* (2nd person plural)
 ‘You would not.’
- f. *Gargamel Şirinler’i hep yakalamaya çalışır. Sence Şirinler Gargamel’i severler mi?*
 ‘Do the Smurfs like Gargamel?’
 EA: *sev-me-z-ler* (3rd person plural)
 ‘They do not.’
- (ii) Context which already uses the negative aorist as a tag-question:
- a. *Yağmur yağarken şemsiyeni açarsan ıslanmazsın, değil mi?*
 ‘You would not get wet, if you open your umbrella when it is raining, right?’
 EA: *ıslan-ma-m* (1st person singular)
 ‘I would not.’
- b. *Sen de böyle sıkı giyinirsen üşümezsin, değil mi?*
 ‘You would not get cold, if you bundle up like that, right?’
 EA: *üşü-me-m* (1st person singular)
 ‘I would not.’

5. Results

The children we have tested so far produced all the errors we have predicted to occur. Recall that we have predicted that the absence of {-z} in 1st person singular and plural may complicate the acquisition process and may yield erroneous production. We have encountered such errors mostly in questions which required an answer in 1st person plural. In (8) below, some errors children have made are given:

- (8a) Experimenter (Exp): *Yolun ortasından yürümek çok tehlikeli. Sen ve arkadaşın yolun ortasından yürür müsünüz?* 'It is dangerous to walk in the middle of a street. Would you and your friend do this?'
 Answer (A): **yürü-me-z-iz* (Utku 2;5)
- (8b) Exp: *Hava çok soğuk. Resimdeki kadın sıkı sıkı giyinmiş. Sen ve annen böyle sıkı giyinirseniz üşür müsünüz?* 'It is cold. The woman in the picture bundled up. Do you get cold if you and your mother bundle up like her?'
 A: **üşü-me-z-iz* (Poyraz 2;9)
- (8c) Exp: *Tükürmek çok kötü bir şey. Sen ve arkadaşların birbirinize tükürür müsünüz?*
 'Spitting is bad. Would you and your friends spit at each other?'
 A: **tükür-me-z-iz* (Ayşegül 3;0)
- (8d) Exp: *Süt içer misin?* 'Do you drink milk?'
 A: **iç-me-z-im* (Damla 3;2)

Table 2 below illustrates the overall error rates. As is clear, there is a difference between two age groups tested. Where the younger group G1 (2;2-3;5) had an error rate of 14.5%, G2 is observed not to make any errors.

Table 2. Errors: Verb root +-mAz+-Im/-Iz (i.e., **kork-ma-z-iz*)

	G1	G2
Error Rate(%)	14,5	0

A second type of ill-formed usage we have predicted was that children may attach the TAM {-(A/T)r} after the negation marker {-mA} in the negative of the aorist and may produce errors like **ver-me-r-im*. Though rare, we have encountered such errors as well, as exemplified in (9) below:

- (9a) Exp: *Sen kedilerden korkar mısın?*
 'Are you afraid of cats?'
 A: **kork-ma-r-im* (Utku 2;5)
- (9b) Exp: *Sen ve arkadaşların uyurken birbirinizi rahatsız eder misiniz?*
 'Do you and your friends disturb each other when sleeping?'
 A: **et-me-r-iz* (Ali 2;7)

- (9c) Exp: *Sen ağaca tırmansan düşmezsin, değil mi?*
 ‘You will not fall down if you climb the tree, right?’
 A: **düş-me-r-im* (Ahmet 3;4)

Table 3 below represents the results where the older group G2 is again observed not to err.

Table 3. Errors: *Verb root+-mA+-r+Person marker* (ie. **kork-ma-r-im*)

	G1	G2
Error Rate(%)	4	0

In addition to these two error types, recall that we have conjectured that children may attach the TAM $\{-(A/I)r\}$ between the verb stem and $\{-mAz\}$ yielding errors like **yap-ar-ma-z*. Although few in number, we have also found such type of errors in G1. In (10) the three errors observed are given:

- (10a) Exp: *Şirinler Gargamel'i severler mi?*
 ‘Do Smurfs like Gargamel?’
 A: **sev-er-mez* (Selin 2;7)
- (10b) Exp: *İnsanlar denizde yüzerken denizkızı görürler mi?*
 ‘Do people see mermaids when they swimming?’
 A: **gör-ür-mez* (Efe 2;7 and Ediz 3;1)
- (10c) Exp: *Palyaço balonları bu yaramaz çocuğa verir mi?*
 ‘Does the clown give the balloons to this naughty boy?’
 A: **ver-ir-mez* (Ediz 3;1)

Moreover, children in our study also produced errors whereby they dropped the morpheme $\{-z\}$ when the answer required a 2nd and 3rd person marker. The four errors encountered are given in (11) in the contexts that they occur:¹

- (11a) Exp: *Arkadaşımın ve benim ellerim kirli. Ellerimizi yıkamadan biz bu sofraya oturabilir miyiz?*
 ‘My friend’s and my hands are dirty. Can we sit at the table with dirty hands?’
 A: **otur-má-sın* (Utku 2;5)
- (11b) Exp: *Bu çocuk bana çok güzel bir çiçek verdi. Ben ona kızarmıyorum?*
 ‘This child has given me a lovely flower. Do I get angry at him?’
 A: **kız-má-sın* (Utku 2;5)
- (11c) Exp: *Sen resim yaparken yerlere boya döker misin?*
 ‘Do you spill paint on the floor when you are painting?’
 A: **dök-mé-yim* (Mehmet 2;8)

1 As is well known in Turkish, negative marker $\{-mA\}$ except for its occurrence in the aorist does not bear stress. That the stress is on the morpheme $\{-mA\}$ in examples in (11) clearly indicates that the children attempt to produce the negative of aorist rather than an imperative verb where the stress would occur on the syllable prior to $\{-mA\}$.

- (11d) Exp: *Sen böyle güzel bir dondurmayı arkadaşlarıyla paylaşıyor musun?*
 'Do you share this delicious ice-cream with your friends?'
 A: **paylaş-mâ-yım* (Poyraz 2;10)

As the number of errors in the last two contexts is low we do not report on the percentage in this study. Future work may reveal a clearer picture of the issue.

Turning to the discussion of the errors seen in the negative of the aorist with 1st person singular, we have observed that errors are captured when the question is asked with the negative of the aorist as in (12).

- (12) Exp: *Sen palyaçolardan korkmazsın, değil mi?*
 'You would not be afraid of clowns, right?'
 A: **kork-ma-z-ım* (Emre 2;9)

The children in G1 had an error rate of 14 percent in questions such as (12) and those in G2 had an error rate of 6%. This particular context happened to be the first context where the older group erred. As we will discuss in the coming section, children's behavior in this context suggests that they may tend to think of {-mAz} as a non-decomposable chunk.

In this study, we have also observed that Turkish children experience problems with person markers during acquisition. As seen in (13), when children were asked a question in 1st person singular, they displayed a tendency not to answer the question in 2nd person singular, but in 1st person or 3rd person singular.

- (13) Exp: *Ben kurbağaları hiç sevmem. Sence ben bu kurbağayı öper miyim?*
 'I do not like frogs. Would I kiss this frog?'
 EA: *öp-me-z-sin* (2nd person singular) 'You would not'
 Given Answer (GA): **öp-me-m/öp-me-z*

Table 4 below illustrates the error rates with questions asked in 1st person singular:

Table 4. Person marker errors: Question (Q) in 1st person sg, EA: 2nd person sg, GA: *1sg/*3sg

	G1	G2
Error Rate	14	3

As another more common ill-formed usage, we have observed that questions asked in 1st person plural were answered in 1st person plural rather than 2nd person plural which in fact is what was expected in the answer.

- (14) Exp: *Annem ve ben çiçeklere hiç zarar vermeyiz. Sence biz bu çiçekleri koparır mıyız?*
 'My mother and I never harm flowers. Do you think that we would pull them?'
 EA: *kopar-ma-z-sınız* (2nd person plural) 'You (plural) do not'
 GA: **kopar-ma-yız* (1st person plural)

In this context the younger group G1 erred with a rate of 59% and G2 with a rate of 27% (Table 5). The considerable number of errors encountered in both groups suggest that children's Theory of Mind has not yet developed fully hence they can just view the situa-

tion presented, from their perspective hence cannot take the perspective of others. Furthermore, children have also been observed to follow an erroneous path with questions asked in 2nd person plural. As is clear from example (15) they displayed a tendency to answer such questions in 1st person singular or 3rd person singular with an error rate of 19% in G1 and that of 10% in G2:

- (15) Exp: *Annen ve sen bu güzel pastayı bu yaramaz çocuğa verir misiniz?*
 ‘Would you and your mother give this delicious cake to this naughty boy?’
 EA: *ver-me-yiz* (1st plural)
 GA: **ver-me-m* (1st singular)/ **ver-me-z* (3rd singular)

Table 5. Person marker errors:

Error Rate(%)	G1	G2
Q: 1st pl, EA: 2nd pl, GA: *1st pl	59	27
Q: 2nd pl, EA: 1st pl, GA: *1st sg/*3rd sg	19	10

In the next section we will turn to a discussion of the results we have obtained in this study.

6. Discussion

This study shows that the irregularity exhibited in the negative of aorist presents problems for Turkish-speaking children yielding errors during the acquisition process. We propose that the errors children produce suggest that children pay attention to affixal order which helps them to extract a formula with respect to the possible slot where the negative affix occurs. This extraction can only be possible if there is a recurring pattern. The fact that in the majority of TAM markers the TAM follows the negative marker signals the potential slot for the negative marker. The behavior of negative aorist, however, obscures the pattern and gives rise to instances where children tend to regularize the latter along the lines of the frequently occurring negation pattern as observed with other TAM markers.

The findings we have so far obtained have shown us that during acquisition of the negative aorist absolute symbolic rules cannot be at work. If they were at work, children would be expected not to make errors at all, or not to make errors exhibiting all the possible combinations of affixal order. Though errors are not very high in number, there is no evidence that there is an absolute rule formulated at the outset. We believe the results of this study hints at the role frequency may play in the acquisition of negative aorist. As mentioned above, one of our predictions was that children may tend not to decompose {-mAz}, rather they may treat it as a unit which does not necessarily undergo morphological parsing. The findings we observed suggest that this prediction is borne out to some extent. We believe that there are many reasons for children to consider {-mAz} as a chunk yielding less errors with this form. In Turkish there are quite a number of constructions which involve {-mAz} as a unit. Consider the constructions in (16). We suggest that the presence of such constructions raises the frequency of occurrence of {-mAz} and lowers the possibility of its being morphologically parsed.

- (16)
- (i) [-Ar....-mAz] constructions:
Ara-r ara-maz 'as soon as s/he calls'
Gör-ür gör-mez 'as soon as she/he sees'
- (ii) Impersonal Passives
Böyle yemek ye-n-mez.
 eat-PASS-AOR.
 'One does not eat like this'
- (iii) Adjectives
güvenil-mez adam 'unreliable man'
uslan-maz çocuk 'incorrigible child'
- (iv) *Ki* constructions
Öyle her şeye ağlan-maz ki!
 'One does not cry for everything!'

Through these constructions the Turkish speaking child will get to hear the {-mAz} form quite frequently. Furthermore in child-directed speech, parents frequently deny permission to their children through the use of the structure *ol-maz* meaning 'you cannot; it is not allowed' as in (17a), or in daily speech adults may deny a request via the use of the form *iste-mez* (17b).

- (17a) Child: *Yap-abil-ir mi-yim?*
 'May I do it?'
 Adult: *Ol-maz!*
 'No. (literaly it doesn't/won't)'
- (17b) Adult: *Yardım edeyim mi?*
 'May I help you?'
 Adult: *İstemez, istemez!*
 'No, no (literaly it doesn't want).'

We intuit that children are generally exposed to the negative of the Turkish aorist in 1st person singular rather than the 1st person plural form and this may be the reason that they make fewer errors with negative aorist in 1st person singular. If less exposure to plural forms is the reason for children's behavior, this observation has to be confirmed by data coming from child-directed speech which is what we plan to do in future work.

7. Conclusion

Acquisition research carried out on the acquisition of morphological irregularities in Turkish over the past five years has shown that when there is irregularity in the distribution of morphemes children tend to err. Furthermore the rate of errors observed in the acquisition tend to be shaped with the nature of irregularity and the frequency of occurrence of the morphemes

at issue (Nakipoğlu & Ketrez (2006); Nakipoğlu & Yumrutaş (2009), Nakipoğlu & Üntak (forthcoming). The findings of this study further confirm that structures which display irregularity in distribution pose problems for children in the acquisition process. The negative aorist with its peculiar distribution proves to be challenging for Turkish children. The current state of the study has shown that children entertain various hypotheses regarding the distribution of the aorist. Though errors encountered are few in some contexts, an almost 15% error rate in examples which have 1st person singular and plural, in other words, in examples which rule out the use of -z but which are apparently used with -z by children calls for a thorough questioning of whether *-mAz* is parsed or perceived as a chunk in Turkish. In the previous section, we have provided some sights as to on what grounds Turkish children may regard *-mAz* as a non-decomposable unit. In particular we have claimed that frequency effects may be at work. A clearer picture though can only be obtained with more data. In this study we have so far tested 40 children and we aim to uncover the path Turkish-speaking children follow in the acquisition of the negative of aorist by testing more children.

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