A nanosyntactic decomposition of Turkish z-paradigm affixes

by Ayşe Feyza Gök

Keywords: z-paradigms, Turkish verbs, Nanosyntax

Problem. Turkish has two sets of person-number agreement markings on the verb, the so-called z and k-paradigms, the latter of which only surfaces in the environment of past tense and conditional suffixes. See Table 1.

	a. k-paradigm		b. z-paradigm	
	Singular	*Plural*	*Singular*	*Plural*
1P	-m	-k	-Im	-Iz
2P	-n	-n-Iz	-sIn	-sIn-Iz
3P	-Ø	-lAr	-Ø	-lAr

Table 1: k and z-paradigm person markers

Such a divergence put under the microscope of the Nanosyntactic framework (Starke 2009, 2014, 2018), which proposes that morphemes are structurally represented by syntactic trees in which every head is an individual, privative feature, suggests that Tense might be a feature present in the inner structure of ϕ suffixes of the z-paradigm in Turkish. This presents a decomposition under the Nanosyntactic perspective, modelling the account under the latest version of the Lexicalization Algorithm (Caha 2009, Caha et al. (in press); Starke 2009, 2018). From a Nanosyntactic point of view, there are two interesting points about the paradigm. First, 2PL morphologically contains 2SG, suggesting that number is higher than person contra the standard decomposition where number features are merged lower than person features in the syntax (see Ackema & Neeleman 2018, Harbour 2016 and Vanden Wyngaerd 2018, all as cited in Cortiula 2023). Second, in standard decompositions of 1st, 2nd, and 3rd persons via privative features, 1PL is built by an additional speaker feature on top of 2PL (see Starke 2021) . However, in the data it appears that 2PL morphologically contains 1PL.

The Nanosyntactic Theory. The theory boils down to the notion that the building blocks of language are actually smaller than morphemes. The morphemes have a more complex inner structure, in this case represented by syntactic trees that consist of nodes, each of which corresponding to a single feature. This would also explain the variation between languages seeing as these syntactic trees can vary in shape and size. The theory works under a unified Lexicalization Algorithm, which explains how structure-building and matching of structure with forms are cyclically interspersed . The steps of the algorithm are as shown in (1).

1) Lexicalisation Algorithm
    a. Merge F and lexicalise FP
    b. If fail, evacuate the closest labelled non-remnant constituent and lexicalise FP
    c. If fail, evacuate the immediately dominating node and lexicalise FP (recursive)
    d. If fail, go to the previous cycle and try the next option for that cycle (recursive)

The algorithm works in a cyclical fashion, meaning that once a feature has been successfully lexicalised,

we try lexicalizing the next feature starting from Step 1. There are also two core principles governing the derivational process (Starke 2009), which are provided in (2).

2)

a. The Superset Principle: A lexically stored tree L can lexicalize a structure S built in syntax iff L contains S as a subtree.
b. The Elsewhere Principle: If there are two matching entries for a feature in the lexicon, the feature is lexicalized by the more specific entry (with less features).

Analysis For z-paradigm suffixes, I propose the decomposition below where segmentation indicates morpheme boundaries. Notice that there are no null affixes of any kind.

	SG	PL
1	yap-ıyor-um	yap-ıyor-uz
2	yap-ıyor-sun	yap-ıyor-sun-uz
3	yap-ıyor	yap-ıyor-lar

Table 2: The paradigm of 'yap' (do) where -ıyor is the invariant imperfective aspect marker

The ordering of the features is not arbitrary and is computed by the functional sequence (Starke 2018, 2020) in a hierarchical fashion. The f-seq will help us know the order in which each feature is lexicalized. A simplified version of the f-seq used in verb conjugations is shown in (3).

3) Nanosyntactic f-seq for verb conjugation paradigms[1] (Cortiula 2023; Ramchand 2008; Starke 2020, 2021; Starke & Cortiula 2021).
Res – Proc – Init – Asp – Mood – Ind – Tense – # – (Pl) – 3p – 2p – 1p

For the paradigm shown in Table 2, I propose Table 3 as the morpheme borders. My initial intuition was for the person markers to exclude the Tense feature, but the partition shown in Table 1 suggests that Tense feature should indeed be included in the person markers as well.

SG	InitP	Asp	Mood	Ind	Tense	#		3P	2P	1P
yap-ıyor	yap			-ıyor						
yap-ıyor-sun	yap		-ıyor			-sun				
yap-ıyor-um	yap		-ıyor			-um				
PL	**InitP**	**Asp**	**Mood**	**Ind**	**Tense**	**#**	**Pl**	**3P**	**2P**	**1P**
yap-ıyor-lar	yap			-ıyor			-lar			
yap-ıyor-sun-uz	yap		-ıyor		-sun		-uz			
yap-ıyor-uz	yap		-ıyor				-uz			

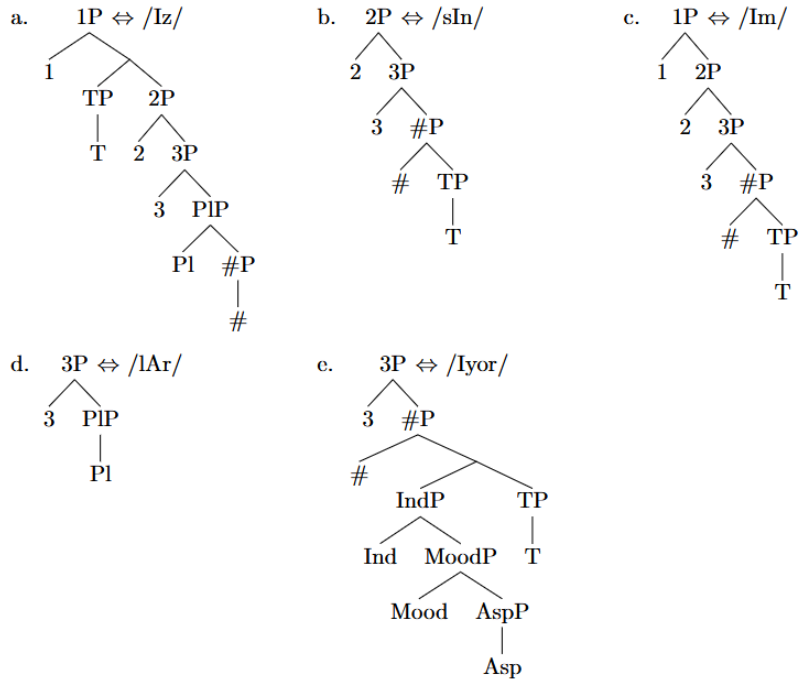
Table 3: Lexicalization table for the verb 'yap'

The syncretic nature of -uz seen in the table where it has two different endings with majorly overlapping features is able to be accounted for by the use of a branching entry. Traditional glossings tend to view - uz

[1] Abbreviations: Res = result, Proc = process, Init = initiation, Asp = aspect, Ind = indicative, # = number, Pl = plural, 3p = person, 2p = participant, 1p = speaker

more as a suffix that is primarily a plural marker. The reasoning behind this would appear to be the syncretism displayed by said suffix not just in Table 2 but in different paradigms as well (e.g. k-paradigms or case paradigms). Seeing as - uz is multifunctional, the intuition that it should be more specific makes sense, although it does not account for all the facts, such as the violation of the functional sequence ordering. Another issue it does not account for is the 1PL form of the verb, where -uz has to lexicalize person in addition to plurality. The entry shown in (4a) can account for these issues simply by containing a subtree that can lexicalize as -uz in the k-paradigm as well. (4e) also presents a complex entry to avoid the surfacing of yap-ıyor-uz in place of yap-ıyor-sun-uz. The full and functional version of the lexicon is shown in (4).

4) Lexicon of the suffixes in *'yap'* paradigm



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