

Issues in the grammar of Turkish comparatives¹

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ABSTRACT: The paper investigates several issues in the syntax/semantics of comparison constructions in Turkish. We first show that although comparison constructions use nominalized constituents in marking the standard of comparison, they involve rich clausal structure under this nominalization. Second, we demonstrate that the interpretation of comparison constructions is constrained by syntactic structure, differing from languages that primarily thrive on contextual cues. We also address the grammatical nature of comparative standards, evaluating the options of a phrasal and a clausal comparative head. We provide evidence against a phrasal head, concluding that Turkish comparatives are clausal.

Keywords: comparatives, Turkish, syntax, semantics

Türkçe Karşılaştırma Yapılarında Birtakım Konular

ÖZ: Makale, Türkçede sözdizim anlambilim arakesitinde karşılaştırma yapılarıyla ilgili birtakım konulara odaklanmaktadır. Önce, karşılaştırma yapılarının adlaştırma temelinde çalışılmalarına rağmen zengin bir tümcesel yapı içerebileceklerini göstereceğiz. Sonrasında karşılaştırma yapılarının anlamlandırılmasının, bu görev için söylemsel ipuçlarına ihtiyaç duyan dillerin aksine, sözdizimsel yapı tarafından kısıtlandığını göstereceğiz. Sonrasında karşılaştırma standardının dilbilgisel özellikleri üzerinde duracağız. Burada

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öbeksell ve tümcesel karşılařtırma bařı olarak iki seçeneęi inceleyeceęiz. Bu seçeneklerden ilkinin eldeki verilerle uyuřmadıęını göstererek ikinci seçeneęin geçerli olduęu sonucuna varacaęız.

Anahtar sözcükler: Karşılařtırma yapıları, Türkçe, sözdizim, anlambilim

1 Introduction

The paper addresses a number of issues in the syntax-semantics of basic comparative constructions in Turkish.

The first issue is the role of nominalization in Turkish comparatives. We evaluate the proposal of Hofstetter (2009, 2013) that Turkish entirely lacks clausal structure in comparatives.

Second, we address whether Turkish comparatives are interpreted compositionally following the constraints imposed by the syntactic makeup of the language, or whether the interpretation is driven on the basis of some contextual cues.

Third, we take a closer look at the grammar of Turkish comparatives. Comparison constructions generally compare two items. We use the term “item” in the usual grammatical sense: a complex linguistic object bringing together a surface form with a semantic interpretation via a mediating syntactic representation. We will call these items the *target* and the *standard* of comparison. In a simple comparative like,

(1) [_{XP} Anna] is taller than [_{YP} Berta].

the constituent we label provisionally as XP is the target and YP is the standard. As we will see below, the types of targets and standards range over various constituent categories.

The two critical issues about the grammar of comparatives are (i) how a comparative head brings together the target and the standard to result in a comparison judgment, and (ii) the grammatical nature of the standard, where options are a fully realized phrase, e.g., DPs, or a remnant of a broader constituent that underwent ellipsis, e.g. CPs. Below, we investigate these issues for the case of Turkish comparatives.

The paper is organized as follows. Section 2 provides background on the issues addressed in the paper. Section 2.2 introduces some key constructions related to comparatives in Turkish. In Section 3.1, we discuss the nominal nature of comparative standards, showing that rich clausal structure is packaged under nominalization. In Section 3.2, we investigate the issue of whether Turkish comparatives are contextually or compositionally interpreted. Section 3.3 demonstrates the impossibility of having a phrasal comparative head in

Turkish, concluding that Turkish has a clausal comparative head. Section 4 concludes the paper.

2 Background

English has the following major comparison constructions:

- (2) a. Anna is taller than Berta (is). (adjectival comp.)
 b. Anna has more apples than Berta (wanted to buy). (nominal comp.)
 c. Anna runs faster than Berta. (adverbial comp.)

Slightly adapting Merchant's (2009) terminology, *than* is the "standard marker," and the complement of *than* (e.g. *Berta (is)* in 2a) is the "standard complement." Following Bhatt and Takahashi (2011), among others, we take the comparative morpheme *-er* as the head of the comparative construction.²

2.1 Phrasal/Clausal distinction

Starting with Hankamer (1973), a central issue concerning comparatives has been the grammatical nature of the standard complement. The options here are twofold: clausal versus phrasal. The present paper investigates which class Turkish comparatives belong in.

We now take a detailed look at these two options. Some standard complements carry clausal remnants on the surface, as in the following examples from Heim (1985), and in the fully articulated forms of (2a) and (2b) above.

- (3) a. The desk is higher than the door is wide. (Comparative Sub-deletion)
 b. I always have more paper clips than I need. (Comparative Deletion)
 c. Cherry plays the trumpet less assertively than Coleman the alto.
 (Gapping)
 d. I have listened to this more often than you have. (VP-ellipsis)

These complements are taken to be derived from a full clause through two steps: (i) extraction of a functional degree head and (ii) eliding some material. Illustrating over,

² Analyzing the morpheme *-er* as instantiating an abstract comparative head dates back to Bresnan 1973, who decomposed *more* into *many* and *-er*.

- (4) Anna is taller than Berta is.

the extraction step yields,

- (5) Anna is taller than [_{CP} *wh_i* [_{C'} Berta is *d_i-tall*]].

and ellipsis gives,

- (6) Anna is taller than [_{CP} *wh_i* [_{C'} Berta is ~~*d_i-tall*~~]].

Such standard complements are called “clausal”.

Some standard complements, on the other hand, do not carry any clausal remnant on the surface; what we have – at least apparently – is a DP:

- (7) Anna is taller than [_{DP} Berta].

Here, the standard complement is a phrase and *than* is some sort of a preposition. Such standard complements are called “phrasal”.

As an interesting sub-case of the clausal option, we can take what appears as a DP on the surface as a CP, reduced from a clausal complement via ellipsis. Here is how such a *reduced clausal standard* compares with a regular clausal standard:

- (8) a. Anna is taller than [_{CP} *wh_i* [_{C'} Berta is ~~*d_i-tall*~~]]. (reduced clausal)
 b. Anna is taller than [_{CP} *wh_i* [_{C'} Berta is *d_i-tall*]]. (clausal)

In order to better understand the difference between the (reduced) clausal and phrasal options, and the issues in the syntax-semantics interface of comparatives, we need to turn to their semantics.

We assume a degree-based semantics³ constructed on the notion of a scale.

- (9) A scale is a triple $\langle D, \leq, f \rangle$, where D is a set of degrees, \leq is an ordering relation and f is a function of type $\langle e, d \rangle$ mapping individuals to degrees in D .⁴

³ See Schwarzschild (2008) for an alternative framework based on thresholds.

⁴ The function f is a model-theoretic rendering of the dimension component – e.g., DIM of Solt 2015 – in degree-based accounts.

The compositional computation of the semantics of a comparative construction involves the interpretation of the following components:⁵

- (10) a. a gradable predicate – matrix and subordinate;⁶
 b. a standard complement;
 c. the standard marker;
 d. the comparative head.

We will illustrate over the gradable adjective *tall*. The scale structure interpreting *tall* will be the triple $\langle H, \leq, \text{height}' \rangle$, where H is the set of heights (e.g. the set of positive integers corresponding to height in centimeters), \leq is an ordering relation (= the ‘less than or equal to’ relation defined over integers), and height'^7 is the function mapping each individual to a degree in H representing their height in centimeters.

Having this scale structure in the background, we start with the predicate *tall*.⁸ It is standard to interpret a gradable adjective as a relation between degrees and individuals:⁹

$$(11) \|\text{tall}\| = \lambda d_d \lambda x_e. d \leq \text{height}'(x) \quad \langle d, \langle e, t \rangle \rangle$$

(11) indicates that *tall* relates an individual to all the heights in the scale that are less than or equal to the height of the individual.¹⁰

Now we turn to the standard complement. Clausal standard complements like the one in (12),

(12) Anna is taller than Berta is.

are formed by extracting the degree complement of the adjective, yielding a lambda abstract on the semantic side:

$$(13) \|\llbracket_{CP} \text{wh}_i \text{ Berta is } t_i \text{ tall} \rrbracket\| = \lambda d. d \leq \text{height}'(\text{berta}') \quad \langle d, t \rangle$$

⁵ See von Stechow 1984; Kennedy 1997 for reviews.

⁶ We focus on dimensional type of gradable adjectives leaving out evaluative adjectives (Bierwisch 1989).

⁷ Primes in formulas indicate non-logical constants.

⁸ We will ignore the semantics of the copula for the sake of simplicity.

⁹ We subscript lambda variables with their types and give the overall type of an interpretation; the rest is left implicit to avoid notational clutter.

¹⁰ Or, equivalently, *tall* relates a height h to all the individuals whose height is greater than or equal to h .

In the next step, the lexical head of the adjective is deleted under identity with the matrix-level adjective, resulting in a kind of free relative:

$$(14) \|\llbracket_{CP} wh_i \text{ Berta is } t_i \text{ tall} \rrbracket\| = \lambda d. d \leq \text{height}'(\text{berta}') \quad \langle d, t \rangle$$

which denotes the set of degrees (=heights) less than or equal to Berta's height.

Taking the standard marker *than* as an identity function, the standard denoting part of the comparative is interpreted as follows:

$$(15) \|\llbracket \text{than } [_{CP} wh_i \text{ Berta is } t_i \text{ tall}] \rrbracket\| = \lambda d. d \leq \text{height}'(\text{berta}'). \quad \langle d, t \rangle$$

Another set denotation comes from the matrix-level, where the degree argument of the adjective is extracted, again yielding a lambda abstract similar to (14), but with an overt adjective head:¹¹

$$(16) \|\llbracket \text{Anna is } d \text{ tall} \rrbracket\| = \lambda d. d \leq \text{height}'(\text{anna}') \quad \langle d, t \rangle$$

We have two sets at our hands. One is the set of all the heights in the scale that are less than or equal to Berta's height, and the other is all the heights in the scale that are less than or equal to Anna's height.

What is left uncovered in our list of components (10) is the comparative head. Given that we already have two set denotations, one for the matrix subject and the other for the standard complement, an influential idea is to take the comparative head to be a degree domain correlate of a generalized quantifier (Heim 2000 a.o.), relating sets of degrees rather than sets of individuals.¹²

In such a generalized quantifier formulation, the comparative head *-er* receives the following semantics:¹³

$$(17) \|\llbracket -er \rrbracket\| = \lambda p_{\langle d, t \rangle} \lambda q_{\langle d, t \rangle} . \max'(q) > \max'(p) \quad \langle \langle d, t \rangle, \langle \langle d, t \rangle, t \rangle \rangle$$

Just like a generalized quantifier, the comparative head takes two set arguments and states a condition applying to these sets. In the present case, the

¹¹ The non-extracted non-comparative positive form of this sentence is:

(i) Anna is 175cm tall.

¹² See Pancheva 2006 for another interesting semantic parallel between individual and degree domains drawn on the basis of partitivity.

¹³ Or, more transparently similar to generalized quantifiers,

(i) $\|\llbracket -er \rrbracket\| = \lambda P_{\langle d, t \rangle} \lambda Q_{\langle d, t \rangle} . P \subset Q \quad \langle \langle d, t \rangle, \langle \langle d, t \rangle, t \rangle \rangle$

condition is that the maximum element in one is greater than the maximum element in the other.

Let us now see how all these come together in interpreting (12), repeated here:¹⁴

(18) Anna is taller than Berta is.

- (19) a. $\|\text{than } [_{CP} \text{ } wh_i \text{ Berta is } t_i \text{ tall}]\| = \lambda d.d \leq \text{height}'(\text{berta}')$
 b. $\|\text{Anna is } d \text{ tall}\| = \lambda d.d \leq \text{height}'(\text{anna}')$
 c. $\|(18)\| = \|\text{-er}\|(\|(19a)\|)(\|(19b)\|) = \max'(\lambda d.d \leq \text{height}'(\text{anna}')) > \max'(\lambda d.d \leq \text{height}'(\text{berta}'))$

(19c) states that the maximum element of the set of heights shorter than or equal to Anna's is greater than the maximum element of the set of heights shorter than or equal to Berta's. This, in effect, is stating that Anna is taller than Berta, yielding a satisfactory interpretation that is congruent with the syntactic aspects of the construction.

Finally, the interpretation of a reduced clausal form like in,

(20) Anna is taller than $[_{CP} \text{ } wh_i [_{C'} \text{ Berta is } t_i \text{ tall}]]$. (reduced clausal)

is identical to that of the clausal comparative (19).

The attentive reader might have noticed that the above formulation would not suit the case for phrasal complements like in,

(21) Anna is taller than $[_{DP} \text{ Berta}]$.

In this example, the sole source of adjectival semantics is the matrix-level adjective, there is no adjectival semantics contributed by the standard complement. The most influential proposal for the semantics of phrasal standard complements is due to Kennedy (1997). He proposes a 3-place comparative head, in order to bring together the adjectival semantics and the two DPs:¹⁵

- (22) $\|\text{-er}\| = \lambda a_{\langle d, \langle e, t \rangle \rangle} \lambda x_e \lambda y_e. \max'(\lambda d.a(d)(y)) > \max'(\lambda d.a(d)(x))$
 $\langle \langle d, \langle e, t \rangle \rangle, \langle e, \langle e, t \rangle \rangle \rangle$

¹⁴ See Bhatt and Pancheva 2004 for a detailed discussion on how the semantic applicative structure given in (19) can be mediated by syntax.

¹⁵ A variant of this proposal takes the arguments in the reverse order; Beck et al. 2012 discuss the implications of this variation.

In interpreting (21), the comparative head *-er* first combines with the adjective *tall*, then the standard complement *than Berta*,¹⁶ and finally with the matrix subject *Anna*:

- (23) a. $\|is\ tall\ -er\| =$
 $(\lambda a \lambda x \lambda y. \max'(\lambda d. a(d)(y)) > \max'(\lambda d. a(d)(x)))(\lambda d \lambda x. d \leq height'(x)) =$
 $\lambda x \lambda y. \max'(\lambda d. d \leq height'(y)) > \max'(\lambda d. d \leq height'(x))$
- b. $\|is\ taller\ than\ Berta\| =$
 $(\lambda x \lambda y. \max'(\lambda d. d \leq height'(y)) > \max'(\lambda d. d \leq height'(x)))(berta') =$
 $\lambda y. \max'(\lambda d. d \leq height'(y)) > \max'(\lambda d. d \leq height'(berta'))$
- c. $\|Anna\ is\ taller\ than\ Berta\| =$
 $(\lambda y. \max'(\lambda d. d \leq height'(y)) > \max'(\lambda d. d \leq height'(berta')))(anna') =$
 $\max'(\lambda d. d \leq height'(anna')) > \max'(\lambda d. d \leq height'(berta'))$

To sum up, there are two major varieties of comparatives, clausal versus phrasal, regarding the grammatical nature of standard complements (and thereby comparative heads). A clausal complement is obtained from a full clause by first extracting the degree argument and then deleting the VP material. A sub-case of the clausal option is a reduced clausal complement, which is like a clausal one, except the inflectional head is elided as well. In clausal comparatives, the comparative head *-er* is a generalized quantifier operating over sets of degrees. The second option is that of a phrasal standard complement, which simply is a DP. In this case, the comparative head is a 3-place operator¹⁷ that takes the adjective, the matrix subject, and the standard as arguments.

2.2 Comparison in Turkish

In this section we take a descriptive look at basic comparison constructions in Turkish. We first illustrate positive adjectival predications involving dimensional adjectives:¹⁸

¹⁶ The standard marker *than* becomes a preposition with identity function semantics.

¹⁷ Bhatt and Takahashi 2011 characterize the difference over the arity of the comparative head: clausal is 2-place, phrasal is 3-place.

¹⁸ Turkish nominal and adjectival projections involve a silent copula, which might be articulated before tense morphology (Kornfilt 1996).

- (24) a. Su sıcak.
 water.Nom hot.Cop.3sg
 ‘The water is hot.’
 b. Anna uzun.
 A.Nom long.Cop.3sg
 ‘Anna is tall.’

Turkish dimensional adjectives do not project a degree argument, as shown by their inability to co-occur with an overt degree value:¹⁹

- (25) a. *Su 80° sıcak.
 water.Nom 80° hot.Cop.3sg
 ‘The water is 80° hot.’
 b. *Anna 180 cm uzun.
 A.Nom 180 com long.Cop.3sg
 ‘Anna is 180 cm tall.’

In the comparative form, standard complements are headed by the ablative case marker *-dan*.²⁰

The particle *daha*, which translates to *more*, is optional.²¹

¹⁹ This semantics is expressed via a combination of nominalization and a locative predicate:

- (i) Su 80° sıcak-lık-ta.
 water.Nom 80° hot-Nom-Loc.Cop3sg
 ‘The water is 80° hot.’

²⁰ We capitalize underspecified segments that adapt to vowel harmony; *A* stands for {a,e}.

²¹ *Daha* is not optional when used in combination with certain particles like the additive *da*, the “even” word *bile* and the question particle *mH*. The following are not synonymous:

- (i) a. Anna Berta-dan daha mı uzun?
 A.Nom B.-Abl more QPart long.Cop.3sg
 ‘Is Anna taller than Berta?’
 b. Anna Berta-dan mı uzun?
 A. B.-Abl QPart long.Cop.3sg
 ‘Is it Berta that Anna is taller than?’

- (26) Anna Berta-dan (daha) uzun.
 A.Nom B.-Abl (more) long.Cop.3sg
 ‘Anna is taller than Berta.’

Differentials are allowed:

- (27) Anna Berta-dan 5 cm uzun.
 A.Nom B.-Abl 5 cm long.Cop.3sg
 ‘Anna is 5 cm taller than Berta.’

- (28) Anna 180 cm-den uzun.
 A.Nom 180 cm-Abl long.Cop.3sg
 ‘Anna is taller than 180 cm.’

3 Analysis

This section provides an analysis of comparative constructions in Turkish. We start by discussing the categorial features of the standard complement. Following that, the discussion will be centered on the further details concerning the grammatical status of the standard complement. We will first demonstrate that Turkish comparatives are syntactically interesting. What we mean by an interesting syntax is that the meaning of comparative constructions is compositionally determined in accord with syntactic organization. The alternative is an interpretation process mostly driven by contextual cues. We name this distinction “contextual” versus “compositional”. Finally, we will discuss the issue of which category – phrasal or (reduced) clausal – better explains the grammar of Turkish comparatives.

3.1 The role of nominalization

Turkish is usually thought to be utilizing nominalizations in comparatives (Wunderlich 2001; Hofstetter 2009, 2013; Beck et al. 2012). In an analysis focused on Turkish, Hofstetter (2009) argues that Turkish lacks clausal comparatives entirely. Hofstetter (2009: 190) cites the example,

- (29) Maria benim düşündüğüm-den zengin.
 Maria my think.Ptcpl.1sg-Abl rich
 ‘Maria is richer than I thought.’

taking *düşündüğüm-den* ‘than my thinking’ to be a deverbal noun. The evidence he cites for this analysis is the presence of “the possessive pronoun *benim*” and the ablative case ending. Hofstetter apparently takes the phrase *benim*

düşündüğümden to be a “perfect nominal” in Vendler’s (1967) sense, which has lost all its verbal/clausal properties and acts like a derived nominal like *düşünce* ‘thought’. In such an analysis, as the comparative standard is a projection of a derived noun, the comparative head would have the phrasal semantics as in (21), repeated here.

(21) Anna is taller than [_{DP} Berta].

The same comparative head would also be in action in comparatives like (26), repeated here.

(26) Anna Berta-dan (daha) uzun.
 A.Nom B.-Abl (more) long.Cop.3sg
 ‘Anna is taller than Berta.’

Turkish comparative standards receive the ablative case. But, the presence of a case marker does not show that the comparative standard is a deverbal noun since embedded clauses in Turkish are also nominal (see Borsley and Kornfilt 2000; Kornfilt 2007 among many others) and can be case marked. Therefore, the presence of the ablative does not necessarily show that we are faced with a derived noun.

The second piece of evidence for a derived noun analysis, namely the presence of “the possessive pronoun *benim*”, is also not valid, because *benim* is not only a possessive pronoun, it can also be, as in the present case, the genitive marked subject of a subordinate clause.

To better assess the present objection to Hofstetter’s (2009) analysis, let us briefly digress to observe subordination in Turkish. The following set of examples describes the morphosyntax of clausal subordination (30b), non-subject relativization (30c), and subject relativization (30d).

- (30) a. Anna Berta-yı seviyor.
 A.Nom Berta-Acc loves
 ‘Anna loves Berta.’
- b. Hans [Anna-nın Berta-yı sev-diğ-in]-i biliyor.
 H.Nom A.-Gen B.-Acc love-Cmpl-Agr-Acc knows
 ‘Hans knows that Anna loves Berta.’
- c. [[Anna-nın *t_i* sev-diğ-i] *wh_i*] kadın;
 A.-Gen love-ORel-Agr woman
 ‘The woman whom Anna loves.’ (non-subject relative)

- d. [[*t_i* Berta-yı sev-en] *wh_i*] kadın_i
 B.-Acc love-SRel woman
 ‘The woman who loves Berta.’ (subject relative)

In this setting, we can trace the source of (29) to the following clause:

- (31) Ben Maria’nın çok zengin olduğunu düşünüyorum.
 I.Nom Maria-Gen much rich be.Compl.Acc think.1sg.Prog
 ‘I think that Maria is very rich.’

Adding another level of embedding will yield the following CP:

- (32) [_{CP} Benim Maria’nın çok zengin olduğunu
 I-Gen Maria-Gen much rich be.Compl.3sg.Acc
 düşündüğüm] doğru değil.
 think.Compl.1sg true not
 ‘It is not true [that I think that Maria is very rich].’

From (32), a standard complement can be obtained by first extracting the degree argument:

- (33) [_{CP} *wh_i* [_C Benim [_{CP} Maria’nın *t_i* zengin
 I-Gen Maria-Gen d-much rich
 olduğu]-nu düşündüğüm]]
 be.Compl.3sg-Acc think.Compl.1sg

followed by ellipsis:

- (34) [_{CP} *wh_i* [_C Benim [_{CP} ~~Maria’nın~~ *t_i* ~~zengin~~
 I-Gen Maria-Gen d-much rich
~~olduğu]-nu~~ düşündüğüm]]
 be.Compl.3sg-Acc think.Compl.1sg

This analysis is supported by the fact that the same interpretation can be obtained by other degrees of ellipsis. Here are the possibilities:

- (35) a. Maria [_{CP} düşündüğüm]-den daha zengin
 Maria-Nom think.Compl.1sg-Abl more rich.Cop.3sg
 ‘Maria is richer than I thought.’

b. Maria [CP benim olduğun-u düşündüğüm]-den
 Maria-Nom I-Gen be.Comp.3sg-Acc think.Compl.1sg-Abl
 daha zengin.
 more rich.Cop.3s
 ‘Maria is richer than I thought she is.’

c. Maria [CP olduğun-u düşündüğüm]-den
 Maria-Nom be.Comp.4sg- think.Compl.1sg-Abl
 daha zengin.
 more rich.Cop.3sg
 ‘Maria is richer than I thought she is.’

The above discussion and examples demonstrate that *düşündüğüm* in Hofstetter’s (2009) example in (29) is not a deverbal noun, but a remnant from a clause nominalized for purposes of subordination. Of course, this does not in itself show that Turkish does not utilize a phrasal comparative head. Such evidence will be provided below in Section 3.3.²² It does, however, show that Turkish utilizes a clausal comparative head.

3.2 Contextual versus compositional interpretation

The basic task in interpreting a comparative is to recognize what is compared with what. More specifically, recognizing the target and the standard. The target is usually given in its full form on the surface, but the standard may come in an elided form. In cases where the target is a clause with more than one participant and the standard consists of a single DP, the interpretative task is to work out which of the participants in the target is compared with the standard. We will shortly see examples of this situation below (36 for German; 37-39 and 41 for Turkish).

In some languages and some construction types, this task is resolved contextually. Beck *et al.* (2012) discuss the contextual comparatives in English, which introduce the standard via an adjunct like *in comparison to...*, and in Japanese, the standard complement is contextually bound rather than compositionally integrated into the structure.

One test relevant for the decision of whether a comparative construction is contextually or compositionally interpreted is case matching effects (Lechner 2001). The presence of matching effects in a language might indicate a reduced clausal standard complement that compositionally interacts with the target.

²² We are grateful to an anonymous DAD reviewer, whose comments and criticisms helped us to improve the argumentation and the presentation in this section.

Here is an example from German (Heim, 1985)

- (36) a. **Ich** habe dir bessere Schlagzeuger als **der**
 I.Nom have you.Dat better drummers.Acc than the
Karlheinz vorgestellt.
 K.Nom introduced
 ‘I have introduced better drummers to you than Karlheinz (has).’
- b. Ich habe **dir** bessere Schlagzeuger als **dem**
 I.Nom have you.Dat better drummers.Acc than the
Karlheinz vorgestellt.
 K.Nom introduced
 ‘I have introduced better drummers to you than (to) Karlheinz.’
- c. Ich habe dir **bessere Schlagzeuger** als **den**
 I.Nom have you.Dat better drummers.Acc than the
Shelly Manne vorgestellt.
 SM.Acc introduced
 ‘I have introduced better drummers than Shelly Manne to you.
 (SM is a drummer)’

The crucial difference between the examples in (36) is the case marking on the standard complement. In each example, it is evident from the semantics that the standard complement carries a remnant case that is congruent with the semantic role of the DP in an underlying clause, which matches with the item in the target that the standard is compared to.

Now let us investigate whether Turkish comparatives are contextual or compositional. Crucially, Turkish does not display matching effects. In the Turkish translations of the German examples above, the standard complement invariably carries the ablative case – this is the sole option. It, nevertheless, can receive all the possible roles in the semantic interpretation, as observed below.

- (37) Anna Berta-yı Karlheinz-dan daha iyi davulcular-la tanıştırdı.
 A.Nom B.-Acc K.-Abl more good drummers-Ins introduced
 ‘Anna has introduced better drummers to Berta than Karlheinz has.’
 ‘Anna has introduced better drummers to Berta than to Karlheinz.’
 ‘Anna has introduced better drummers than Karlheinz to Berta.(K is a drummer)’

Getting all the readings in (37) might require some contextual support for some speakers. The absence of matching effects is easier to detect in simple transitives rather than in di-transitives:

- (38) Anna Berta-yı Hans-dan çok seviyor.
 A.Nom B.-Acc H.-Abl much loves
 ‘Anna_i loves Berta more than she_i loves Hans.’
 ‘Anna loves Berta_i more than Hans loves her_i.’

Looking at the absence of the matching effects in Turkish, it might be tempting to think that Turkish comparatives are also interpreted contextually. In what follows, however, we will demonstrate that Turkish comparatives are compositional rather than contextual.

First, the test of matching effects may not be as decisive as it is thought to be. Merchant (2009:154) discusses evidence that DPs may first receive a structural case in a certain domain, and receive another case in the domain that they raise to, where only the case received later is morphologically realized. Turkish may well be such a language, which fails to display matching effects because the ablative “overrides” the underlying case.

Although quite interesting and worthwhile, we will not pursue this possibility further in the present paper, as there is a clearer demonstration of the compositionality of Turkish comparatives.

Observe a comparative with a matrix verb that takes a clausal complement (the translation of the example will be discussed below):

- (39) Hans [Anna-nın Berta-yı sev-diğın]-e
 H.Nom A.-Gen B.-Acc love-Cmpl-Dat
 [Fritz]-den daha çok üzüldü.
 F.-Abl more much regretted

If Turkish comparatives were contextually interpreted, there would be no constraint on the role of the standard complement *Fritz* in the semantics of the construction. But this is not the case. (39) can only mean (40a). The other possibilities (40b) and (40c) are not attested.

- (40) a. Hans regretted that Anna loves Berta more than Fritz regretted that.
 b. *Hans regretted that Anna loves Berta more than he regretted that Fritz loves Berta.
 c. *Hans regretted that Anna loves Berta more than he regretted that Anna loves Fritz.

The standard complement *Fritz*, can be put to comparison only with the matrix subject *Hans*, the DPs in the subordinate clause are not available for such an association. This impossibility would be unexpected in a contextually driven interpretation, as these DPs are contextually available.

Another example demonstrating the robust structural constraints on the interpretation of the comparative is:

- (41) a. [Anna-nın öner-diđi] film [Berta]-dan güzeldi.
 A.-Gen recommend-ORel film B.-Abl was beautiful
 b. The film that Anna recommended was better than Berta. (film vs. Berta)
 c. *The film that Anna recommended was better than that recommended by Berta.

Here, we again have only the reading where the standard *Berta* is compared with the matrix subject (reading (41b)), but not with the subordinate subject (reading (41c)).

The data considered in this section show that standard complements cannot be compared with constituents in an embedded position. Given that there are structural constraints on which constituent the standard can be associated with, we conclude that Turkish comparatives are compositional rather than contextual. The next question concerns the grammar of this compositionality.

3.3 Are Turkish comparatives phrasal or clausal?

The question we need to answer at this point is the following: Why are the readings comparing the standard complement with embedded DPs – (40a), (40b) or (41c) – not available?

First, we need to observe whether there is any semanticopragmatic obstacle to getting these readings. Considering the full form of these examples shows that there is none. All the sentences below are grammatical and mean what they are supposed to mean:

- (42) a. Hans Anna'nın Berta'yı sevdiğine, Fritz'in Berta'yı sevdiğinden daha çok üzöldü.
 'Hans regretted that Anna loves Berta more than he regretted that Fritz loves Berta.'
 b. Hans Anna'nın Berta'yı sevdiğine, Anna'nın Fritz'i sevdiğinden daha çok üzöldü.
 'Hans regretted that Anna loves Berta more than he regretted that Anna loves Fritz.'
 c. Anna-nın öner-diđi film Berta'nın öner-diđi film-den güzeldi.
 'The film that Anna recommended was better than that recommended by Berta'

Let us now momentarily assume that Turkish standard complements are phrasal, and observe the implications of this assumption. If the standard complement is phrasal, namely a DP, the comparative head needs to access two individuals and a predicate into which it can feed these individuals as arguments. The semantics of the comparative head congruent with a phrasal standard is repeated here:²³

$$(43) \quad \|\text{daha}\| = \lambda a_{\langle d, \langle e, t \rangle \rangle} \lambda x_e \lambda y_e . \max'(\lambda d. a(d)(x)) > \max'(\lambda d. a(d)(x)) \\ \langle \langle d, \langle e, t \rangle \rangle, \langle e, \langle e, t \rangle \rangle \rangle$$

In adjectival comparatives the predicate is directly contributed by an adjective. In comparatives that involve clausal constituents, as in the examples discussed in this section, the predicate must be obtained via semantic abstraction triggered by syntactic extraction, à la, for instance, Heim and Kratzer (1998).

For instance, in interpreting (39) as (40a), the following extraction is formed:

- (44) a. $[wh_j [wh_i [t_i [Anna-nın \quad Berta-y_1 \quad sev-diğın]-e \\ A.-Gen \quad B.-Acc \quad love.Cmpl-Dat \\ t_j \quad üzüldü]]]$.
 d-much \quad regretted
- b. $\|(44a)\| = \lambda d \lambda x. x \text{ d-much regrets that Anna loves Berta}$

(44b) relates each individual to the degree of regret s/he experiences about Anna's loving Berta.

Likewise, in order to derive the unavailable reading (40b), there needs to be assembled an abstraction of the form:

- (45) a. $[wh_j [wh_i [\quad Hans \quad [t_i \quad Berta-y_1 \quad sev-diğın]-e \\ H.Nom \quad B.-Acc \quad love.Cmpl-Dat \\ t_j \quad üzüldü]]]$.
 d-much \quad regretted
- b. $\|(45a)\| = \lambda d \lambda x. Hans \text{ d-much regrets that } x \text{ loves Berta}$

This time the abstract in (45b) relates each individual x to how much Hans regrets that x loves Berta. A similar extraction where *Berta* is extracted would

²³ We assume a phonologically empty comparative head that might optionally be realized as *daha*. Alternatively, one can take the ablative on the standard as instantiating both the standard marker and the comparative head. The choice is immaterial for our purposes.

be needed to get (40c). If these extractions can be shown to be ruled out, then one can explain the unavailability of the associated interpretations.

Crucially, however, there is no ban on such extractions. These structures are not extraction islands in Turkish:²⁴

- (46) a. [Hans-ın [Anna-nın *t_i* sev-diğın] e üzül-düğü]
 H.-Gen A.-Gen love-Cmpl-Dat regret-ORel
 kadını.
 woman
 ‘The woman who Hans regrets that Anna loves’
- b. [Hans-ın [*t_i* Berta’yı sev-diğın]-e üzül-düğü]
 H.-Gen B.-Acc love-Cmpl-Dat regret-ORel
 kadını.
 woman
 ‘The woman who Hans regrets that loves Berta’
- c. [[*t_i* öner-diği] film güzel ol-an] kadını.
 recommend- film beautiful be-SRel woman
 ‘The woman such that the film she recommended was beautiful’

Furthermore, a comparative structure is also not a problem for extraction:

- (47) a. Hans-ın [Anna-nın *t_i* sevdiğine] [Fritz’den] daha çok üzüldüğü
 kadını.
 ‘The woman such that Hans regrets that Anna loves her; and this
 regret is greater than the regret Fritz feels about the same state of
 affairs’
- b. Hans-ın [*t_i* Berta’yı sevdiğine] [Fritz’den] daha çok üzüldüğü
 kadını.
 ‘The woman such that Hans regrets that she loves Berta; and this
 regret is greater than the regret Fritz feels about the same state of
 affairs’

Therefore, there appears to be no reason why readings (40b) and (40c) should not be available, if Turkish had a phrasal comparative head. As these

²⁴ The first two examples might carry some pragmatic difficulty for some speakers; replacing *üzül* (‘regret’) with *inan* (‘believe’) would avoid this, leaving the essential properties of the example intact.

interpretations are not available, we conclude that Turkish does not have a phrasal comparative head of the form (43).

Given that the comparative head is not phrasal, the only option left is that it is a clausal head like (17), repeated here:

$$(48) \quad \|\text{daha}\| = \lambda p_{\langle d,t \rangle} \lambda q_{\langle d,t \rangle} . \max(q) > \max(p) \quad \langle \langle d,t \rangle, \langle \langle d,t \rangle, t \rangle \rangle$$

Still, we are in need of explaining why readings that require a comparison between the standard and an argument in an embedded position are not available. One place we can think of to seek the explanation is the reduction process that reduces a clausal standard of type $\langle d,t \rangle$ down to a DP remnant. For instance, in order to obtain the unattested reading (40b), one would need a deletion like,

- (49) a. [wh_j [Hans [Fritz'²in Berta'yı sevdiğine] d-much_j üzüldü]].
 b. $\|(49a)\| = \lambda d. \text{Hans } d\text{-much regrets that Fritz loves Berta}$

When such an abstract is obtained, the comparative head in (48) can bring this abstract and (50a) coming from the matrix level to complete the interpretation.

- (50) a. [wh_j [Hans [Anna'nın Berta'yı sevdiğine] d-much_j üzüldü]].
 b. $\|(50a)\| = \lambda d. \text{Hans } d\text{-much regrets that Anna loves Berta}$

This way the degree Hans regrets that Anna loves Berta would be compared with the degree he regrets that Fritz loves Berta, the reading (40b). A similar derivation would be applicable for reading (40c), where Fritz is compared with Berta. But, as we saw above, these interpretations are not available.

Does this show that Turkish does not have clausal comparatives either? Not necessarily. If we can find an independent reason that rules out the deletions needed for a clausal derivation, then we can maintain that Turkish has clausal comparative standards and a clausal head. In such a setting, the reason why the system cannot converge to readings (40b) and (40c) would turn out to be due to a constraint on ellipsis rather than directly related to the grammar of comparison.

However, constructing an argument along these lines is difficult for empirical reasons. If the problem with deriving the unattested readings in (40) is due to a constraint on ellipsis, then similar constraints should be observable in sluicing constructions. The crucial point is whether sluicing is possible for a given argument position, and if so, whether the remnant DP needs to carry its underlying case. Unfortunately, eliciting unified judgments in this domain

proved to be impossible. We first give the relevant examples, without including judgments. Here are the corresponding sluicing examples for the unavailable readings (40b), (40c) and (41c), respectively.

- (51) a. Hans [birinin Berta-yı sevdiđin]-e
 H.Nom someone.Gen Berta-Acc loves.Cmpl.3sg-Dat
 çok üzüldü, ama kim(in)
 much regretted but who(.Gen)
 bilmiyorum.
 bilmiyorum.
 ‘Hans regretted that someone loves Berta, but I don’t know who.’
- b. Hans [Anna-nın birini sevdiđin]-e
 H.Nom Anna-Gen someone.Acc loves.Cmpl.3sg-Dat
 çok üzüldü, ama kim(i)
 much regretted but who(.Acc)
 bilmiyorum.
 not know.1sg
 ‘Hans regretted that Anna loves someone, but I don’t know who.’
- c. Birinin önerdiđi film çok güzeldi,
 someone.Gen recommend.Rel film.Nom much beautiful.Past
 ama kim(in) bilmiyorum.
 but who(.Gen) not know.1sg
 ‘The film someone recommended was beautiful, but I don’t know who.’

(52) gives the sluicing constructions for every extraction position in the matrix of (37), repeated here, where all possible comparative readings were available.

- (37) Anna Berta-yı Karlheinz-dan daha iyi davulcular-la tanıştırdı.
 A.Nom B.-Acc K.-Abl more good drummers-Ins introduced
 ‘Anna has introduced better drummers to Berta than Karlheinz has.’
 ‘Anna has introduced better drummers to Berta than to Karlheinz.’
 ‘Anna has introduced better drummers than Karlheinz to Berta. (K is a drummer)’
- (52) a. Anna Berta-yı biriyle tanıştırdı, ama
 A.Nom B.-Acc someone.Ins introduced but
 kim(le) bilmiyorum.
 who(.Ins) not know.1sg
 ‘Anna introduced someone to Berta, but I don’t know who.’

- b. Anna Berta'yla birin-i tanıştırdı, ama
 A.Nom B.Ins someone-Acc introduced but
 kim(i) bilmiyorum.
 who(.Acc) not know.1sg
 'Anna introduced Berta to someone, but I don't know who.'
- c. Birisi Anna'yla Berta-yı tanıştırdı, ama
 someone.Nom A.Ins B.-Acc introduced but
 kim bilmiyorum.
 who not know.1sg
 'Someone introduced Anna to Berta, but I don't know who.'

What we seek for here is an asymmetry between sluicing operations involving remnants from matrix versus embedded positions. İnce (2012) claims that sluicing constructions are grammatical when the remnant DP carries its underlying case, except for the genitive embedded subjects. Our consultation to native speaker judgments, however, failed to be as clear. Kiper (2020), the only experimental study on Turkish sluicing we are aware of, also contradicts İnce's (2012) claims, and does not report an asymmetry between the matrix versus embedded position remnants. In the absence of empirical evidence for an asymmetry between matrix versus embedded-level sluicing, the question of why examples where a standard is compared with an embedded argument has to remain unsolved for the present.²⁵

4 Conclusion

The paper addressed various issues in the syntax/semantics of comparative constructions in Turkish. The contributions of the paper can be summarized as follows:

- (53) a. We showed that Turkish comparatives can involve complex clausal structure in the standard complement. This fact might be blurred because the comparative standard is invariably integrated into the structure through nominalization. This is, after all, how clausal embedding in Turkish works.
- b. We showed that Turkish comparatives are interpreted compositionally on the basis of syntactic structure, rather than solely with the aid of contextual information.

²⁵ Once again, we are grateful to an anonymous DAD reviewer (see fn. 20) for comments and criticisms that led us to better frame the discussion in this section, and for bringing Kiper (2020) to our attention.

- c. We showed that assigning a three-place phrase taking category to the comparative head leaves certain patterns in the data unexplained. Therefore, Turkish must have a clausal comparative head.

Finally, we had to leave open the issue of why Turkish clausal comparatives cannot compare a target with an embedded standard of comparison.

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