Some remarks on the Nakh-Dagestanian affective construction[1]

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Nakh-Dagestanian languages are famous (and quite well studied) for their extensive case marking, which at first glance appears exotic (see Comrie & Polinsky 1998, Ganenkov & Maisak 2020 for a discussion). At the same time, the mapping from various nominal forms to verbal arguments has been investigated less. This paper is an attempt to explore such mapping, using data from the Nakh-Dagestanian language Tsez. It is my hope that similar studies can be carried out on other languages of the family, thus stimulating micro-comparative research on the encoding of argument structure.

The main focus of this paper is the status of arguments in the affective construction whose predicates come from the ranks of verbs expressing perception and cognition. In order to analyze this construction, I will first describe case forms and postpositional phrases (Section 1). Section 2 presents the affective construction. Section 3 introduces diagnostics indicating that the affective construction is not a homogenous phenomenon; of special interest there is the masdar relative construction, which has not been studied previously. Section 4 outlines the analysis of Tsez affective constructions, showing that they are structurally ambiguous.

1. Tsez case forms and postpositional phrases

The inventory of Tsez grammatical cases includes absolute, ergative, genitive/possessive (which shows case concord with the head noun), and lative (the form I will return to below); see Kibrik (1970); Comrie & Polinsky (1998), Ganenkov & Maisak (2020), a.o. For the majority of nouns, the ergative coincides with the oblique stem (see Kibrik & Kodzasov 1990 for details).

Spatial expressions are formed by combining morphemes positioned in two or three morphological slots. The slot closest to the nominal stem is reserved for the morpheme indicating the reference point (aka localization) in a locative configuration: horizontal or vertical surface, inner space (hollow or filled), adjacent space, etc. The second slot houses the morpheme encoding path with respect to the reference point, such as movement from that point, to that point, and so forth; the absence of motion is a separate interpretive component, one that is

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[1] TBA

expressed by the essive. Yet another slot, furthest away from the stem, is reserved for morphemes expressing deictic distinctions, roughly [visible] (no marking) and [out of sight] (associated with overt marking); the two distinctions are referred to as non-distal and distal respectively (Comrie & Polinsky 1998).[2] Table 1 shows the combination of reference-point (localization) marking and motion-path marking in the non-distal deictic form. The names of spatial forms are composed from the name of the localization followed by the name of the motion (e.g., apud-allative, poss-ablative, etc.). [3]

Table 1. Tsez spatial forms, non-distal series.

	Type of motion			
	Absence of motion (essive)	Motion to (lative)	Motion away from (ablative)	Motion towards (allative)
IN (in a hollow space)	-ä	-är	-äy	-äɣor
CONT (among, in filled space, in mass)	-ł	-łer	-łäy	-łxor
SUPER (on horizontal space)	-ƛ'(o)	-ƛ'or	-ƛ'äy	-ƛ'är/-ƛ'äɣor
SUB (under)	-ƛ	-ƛer	-ƛäy	-ƛxor
POSS (on vertical space)	-q(o)	-qor	-qäy	-qär/-qäɣor
AD (at, touching)	-x(o)	-xor	-xäy	-xär/-xäɣor
APUD (near)	-de	-der	-däy	-där/-däɣor

Abstracting away from the complications of stem morphology referenced in footnote 2 and from variation in the ending of some spatial forms (most notably the allative), we notice that the lative and allative both share the morpheme *-r* (a simple scanning of the forms suggests that the allative can be further decomposed into two segments, of which the *-r* ending is also found in the lative).The same ending *-r* marks what is traditionally called the dative in grammars of other

[2] The main complication in Tsez noun morphology is that a large number of nouns have a stem, used before inflectional or spatial suffixes, that is distinct from the absolutive singular. Some nouns with such a distinct stem use it before spatial case suffixes and the equative marker *-ce*, while for other such nouns the unmarked form (one that coincides with the absolutive singular) has to be used as stem, except for the IN localization, where the oblique case stem is used. Some nouns use different stems (one of which may be the same as the absolutive singular) before some combination of oblique singular, absolutive plural, and oblique plural. In addition, many nouns allow variants. The most frequent difference between the absolutive singular and the stem used for other forms is the insertion of a final segment or segment sequence in the latter.
[3] Abbreviations follow the Leipzig Glossing Rules.

Nakh-Dagestanian languages (see Ganenkov & Maisak 2020 for an overview), as well as in descriptions of Tsez (Bokarev 1959, Imnajšvili 1963, Comrie & Polinsky 1998). Compare:

(1) a. nesi-r
         DEM.CLASS.I-R
         'to him'

     b. is-er
         bull-R
         'to the bull'

     c. es-na-za-r
         sibling-PL-OS.PL-R
         'to (the) siblings'

(2) a. poč-ma-r
         post.office-OS-R
         'to the post office'

     b. šahar-yä-xor
         town-OS-ALL.R
         'to the city'

Since the lative function of the morpheme that appears in spatial forms is clear, it is more parsimonious to characterize the *-r* form as encoding the lative, rather than post two homophonous forms, one encoding a motion path, and the other, a more abstract dative marker. In the examples below, *-r* will be glossed as LAT(ive); the same convention is adopted in Polinsky (2015).

Tsez draws a distinction between permanent and temporary possession, in particular with respect to verbs of existence and verbs of transfer. With the former, the contrast is expressed by the genitive vs poss-essive, as shown in (3). With verbs of transfer, the lative encodes a permanent recipient, (4a), whereas the poss-essive marks the noun whose referent receives something temporarily, as in (4b).

(3) a. Murad-e-s   mašina   zow-ä?
         Murad-OS-GEN1   car.ABS.III   be.PST-INTERR
         'Did Murad have (own) a car?'

     b. Murad-qo   mašina   zow-ä?
         Murad-POSS.ESS   car.ABS.III   be.PST-INTERR
         'Did Murad have a car (for temporary use)?'

(4) a. obiy-ä   Murad-e-r   mašina   b-iči-s
         father-ERG   Murad-OS-LAT   car.ABS.III   III-leave-PST.WIT
         'Father left Murad the car (to keep).'

     b. obiy-ä   Murad-qo   mašina   b-iči-s
         father-ERG   Murad- POSS.ESS   car.ABS.III   III-leave-PST.WIT
         'Father left Murad the car temporarily.'

One class of verbs, however, always takes an argument in the lative, although one could argue that these verbs denote a fleeting eventuality: these are verbs of perception and cognition, which I describe in the next section.

2.   Affective construction

Tsez, like other Dagestanian languages, has an affective construction (also known as experiencer construction), whose predicate is a verb denoting a psychological state: perception or cognition. Several verbs that occur frequently in this construction include:[4] AGR-*ukʷad-* 'see', AGR-*iy-* 'know, understand', *koλ'-* 'know, be trained, prepared for something', AGR-*et-* 'like, love, want, need', *teq-* 'hear', AGR-*ac-* 'dislike', AGR-*es-* 'find', *čuq-* 'recognize, understand', *šuλ'-* 'forget'. They all share the same marking on their arguments: the experiencer, which in most cases is animate, appears in the lative form, and the stimulus is in the absolutive (see Comrie & van den Berg 2006; Cysouw & Forker 2009 for this construction in other Nakh-Dagestanian languages and further references). The verb agrees with the absolutive argument.

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[4] Only a subset of vowel-initial verbs take agreement prefixes; in the representation of these verbs, AGR stands for the agreement slot.

Consider examples of the affective construction below, with more literal equivalents in parentheses:[5]

(5)　Nesi-r　　　　baru　　　　y-ukay-nč'i.

　　　DEM.I-LAT　　wife.ABS.II　　II-see-PST.WIT.NEG

　　　'He did not see (his) wife.' (lit.: the wife was not visible to him)

(6)　Dä-r　　　　nesi-s　　　　ʕamal　　　　　　b-aci-x.

　　　1SG-LAT　　DEM.I-GEN1　character.ABS.III　III-dislike-PRS

　　　'I can't stand his personality.' (lit.: his personality is distasteful to me)

(7)　Elo-gon　　　　　　yisi-r　　　　surat-ce　　　　bercinaw　　　kid

　　　there-CONTR.TOP　　DEM.I-LAT　picture-EQUAT　beautiful　　　girl.ABS.II

　　　y-esu-n.

　　　II-find-PST.nWIT

　　　'And there, he found a picture-perfect beautiful girl.' (ʕAliqilič:168)

　　　(lit.: a … girl turned out…)

(8)　Elu-r　　　　mašina　　　c'aq'　b-et-äsi　　　　　yoł.

　　　1PL-LAT　　car.ABS.III　very　III-want-RES.PTCP　　AUX.PRS

　　　'We badly need a car.' (lit.: car is wanted to us)

(9)　Xex-za-r　　　　ecno-ni　　　igruška　　šuƛ'i-s.[6]

　　　children-OS-LAT　new-DEF　　toy.ABS.IV　forget-PST.nWIT

　　　 'The children forgot (about) the new toy.'　 (lit.: the toy was forgotten to the children)

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[5] Here and below, I use a number of elicited examples, which are critical when minimal pairs are needed. Some examples come from the Tsez Annotated Corpus (https://tsezacp.clld.org/), which includes fairy tales, published with Russian translation as Abdulaev and Abdullaev (2010). Examples from the corpus are followed by the name of the text and the corresponding line in that text.

[6] The verb 'forget' has an additional case frame, with the experiencer in the absolutive and the stimulus in the sub-ablative form:

(i)　Xexbi　　　　　　šuƛ'i-s　　　　　　ecno-ni　　　igruška-ƛ-äy.

　　　children.ABS.(nIPL)　forget-PST.WIT　　new-DEF toy-SUB-ABL

　　　'The children forgot (about) the new toy.'

This development may be due to influence from Russian, where the verb *zabyvat' o* NP 'forget about' takes the nominative subject and a prepositional object.

Some other affective predicates are derived on the basis of the verbs listed above. For example, 'smell' is *maħ b-iy-*, literally 'to know a smell', and 'taste' is *t'aʕam b-iy-/gimu y-iy-*, literally meaning 'to know a taste'; in each case, the word 'smell' or 'taste' is in the absolutive argument position and the stimulus is expressed as the adnominal genitive (the complex noun phrase expressing stimulus is shown in brackets below):

(10)   Dä-r   [gagali-s   maħ]   b-iy-x.
       1SG-LAT   flower-GEN1   smell.ABS.III   III-know-PRS
       'I smell flowers.' (lit.: flower's smell is known to me)

(11)   [Ci-yo-s   t'aʕam]   b-iy-ä   deb-er?
       salt-GEN1   taste.ABS.III III-know-INTERR   2SG-LAT
       'Did you notice the saltiness?' (lit.: is salt's taste known to you?)

Questions that arise in the analysis of the affective construction have to do with the status of the associated verbs (e.g., are these verbs transitive or intransitive?) and with the status of the absolutive and lative noun phrases (are they both arguments? which one is the subject?).

As an aside, not all predicates denoting internal or psychological states appear in the affective construction. For other constructions involving psychological verbs, see Polinsky (2015).

3.   Two types of lative-argument verbs

The question that I will explore in this section has to do with the syntactic status of the lative and absolutive arguments. To anticipate the discussion below, I will show that lative-taking verbs of perception and cognition are not a homogeneous class, hence the affective construction is just a label, albeit a convenient one. These verbs differ in the way they causativize, and their arguments have different binding properties. We also observe differences in the way arguments of these verbs are modified by masdar clauses. I will now discuss these properties in turn.

3.1.   Causative formation

Tsez has several causative affixes, among which the suffix *-Vr-* is most productive, deriving morphological causatives from all kinds of simple verbs (for other strategies of causative

formation, see Polinsky 2015). This section will only discuss morphological causatives with the suffix *-Vr-*.

As mentioned a moment ago, verbs of cognition and perception do not causativize uniformly, but at the same time it is not a free-for-all. Rather, these verbs follow two patterns of causativization. One pattern creates transitive verbs (Pattern A), and the other, ditransitive (Pattern B).[7] Crucially, each verb follows just one of the two patterns; there is no optionality.

3.1.1. Pattern A: Transitivization of cognition/perception verbs

With a subset of cognition/perception verbs, namely, 'know', 'forget', 'find', and the verbs denoting the four non-visual senses ('hear', 'feel', 'taste', 'smell'), causativization creates volitional verbs whose agent corresponds to the experiencer in the affective construction. This is represented schematically as follows:

(12)   Affective construction: Experiencer-LAT   Stimulus-ABS   V

                                         ↓   ↓   ↓

        Causative construction: Agent-ERG   Stimulus-ABS   V-CAUS

To illustrate, compare the verb AGR-*es-* 'find', which combines wtih the absolute stimulus and lative experiencer, and its causative counterpart AGR-*esur-* 'find; look for', which takes an ergative agent and absolute stimulus/patient.[8] The verb changes from intransitive to transitive, and the roles change, with the experiencer now denoting the agent-like argument, but no new participants are introduced.

(13)   a.   Aħoˤ-r   meši   b-esu-s.
             shepherd-LAT calf.ABS.III   III-find-PST.WIT
             'The shepherd found the calf.' [LAT-experiencer, ABS-stimulus]

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[7] Causativization of perception and cognition verbs outside the affective construction follows standard rules of causative formation for intransitives or transitives (see section 2.2 for the discussion of 'fear'), and I will not be concerned with them here.

[8] Whether the stimulus actually becomes a patient in the ergative construction is unclear. I will continue to refer to that participant as stimulus, with the understanding that it corresponds to a patient-like (theme-like) argument.

b. Aħ-ä meši b-esu-r-si.

 shepherd-ERG calf.ABS.III III-find-CAUS-PST.WIT

 'The shepherd discovered/looked for the calf.' [ERG-agent, ABS-stimulus]

Likewise, with the complex verb 'smell', the experiencer in the affective construction corresponds to the agent-like argument in the transitive clause:

(14) a. Madina-r [gagali-s maħ] b-iy-n.

   Madina-LAT flower-GEN1 smell.ABS.III III-know-PST.nWIT

   'Madina perceived the scent of flowers.' [LAT-experiencer, ABS-stimulus]

  b. Madin-ä [gagali-s maħ] b-iy-r-si.

   Madina-ERG flower-GEN1 smell.ABS.III III-know-CAUS-PST.WIT

   'Madina sniffed at flowers.' [ERG-agent, ABS-stimulus]

The verb *šuλ'-* 'forget (lit.: be forgotten)' takes the experiencer in the lative and the stimulus in the absolutive (see (9) above), whereas its causative counterpart takes the ergative agent/experiencer and the absolutive stimulus. Given its semantics, it is not surprising that the corresponding causative verb is often used in imperatives:

(15) *pro* ac ħiš-a šuλ'-är-no/*šuλ'-no!

  ERG door.ABS.II close-INF forget-CAUS-PROH/be.forgotten-PROH

  'Don't forget to close the door!'

In some cases, the interpretive contrast between the intransitive psychological predicate and its transitive counterpart is quite subtle. Compare the intransitive AGR-*iy-* 'know; happen to know' and the transitive AGR-*iy-r-* 'know; get to know'. Example (16) is an appropriate comment on someone who grew up in a place where it was hard to learn Russian; meanwhile, (17) emphasizes commitment to knowing and maintaining one's language.

(16) Neła-r   ʕurus   mec   b-iy-x-ānu.

      DEM.nI-LAT   Russian   language.ABS.III   III-know-PRS-NEG

      'She does not know the Russian language.'

(17) [Q'ʕim-ä q'ʕim-e-s   mec   b-iy-r-ani-x]

      own-OS-GEN1   language.ABS.III   III-know-CAUS-MASD-AD.ESS

      ħažetaw   šebin   (yoł).

      important   thing.ABS.IV   be.PRS

      'It is important to know one's own language.'

Similarly, (18) may be a statement about an accidental encounter, while in (19) the implication is that an intentional effort is being made.

(18) Dä-r   ža   uži   ged-mo-x-or   Ø-iy-s.

      1SG-LAT   DEM   boy.ABS.I   garment-OS-AD-LAT   I-know-PST.WIT

      'I recognized (knew) that boy by his shirt.'

(19) Aħ-ä   nesi-s   bˤeλ'λ'u   šila-za-x-or

      shepherd-ERG DEM.I-GEN   sheep(.SG).ABS.III   horn-OS.PL-AD-LAT

      b-iy-r-si.

      III-know-CAUS-PST.WIT

      'The shepherd recognized (knew) his sheep by its horns.'

3.1.2. Pattern B: Ditransitivization of cognition/perception verbs

In the second pattern of causativization of cognition and perception verbs, a new participant is introduced as the causer, creating a three-place predicate. Consider the causative of *-et-* 'like, want'; causativization adds a causer, the experiencer becomes the causee in the poss-essive, and the stimulus remains in the absolutive. To represent this schematically:

(20) Affective construction: Experiencer-LAT   Stimulus-ABS   V

                               ↓   ↓   ↓

      Causative construction: Agent-ERG   Causee-POSS-ESS   Stimulus-ABS   V-CAUS

For example,

(21) a. Debe-r   čorpa   b-eti-x-ānu.
          2SG-LAT   soup.ABS.IV   IV-like-PRS-NEG
          'You don't like (the) soup.'

      b. Eni-y-ä   debe-q   yedu   čorpa   b-et-ir-xo.
          mother-OS-ERG   2SG-POSS.ESS DEM.nI soup.ABS.IV   IV-like-CAUS-PRS
          'The mother is making/will make you like this soup.'

The causative of AGR-*ukad-* 'see (be visible)' is the ditransitive verb AGR-*ukar-* 'show'. Here, the agent appears in the ergative, the recipient appears in the poss-essive, and the absolutive encodes the stimulus/patient:

(22) a. xex-za-q   kino   r-ukay-s.
          child-OS -LAT movie.ABS.IV   IV-see-PST.WIT

          '(The) children saw a/the movie.'

      b. Učitel-ä   xex-za-q   kino   r-uka-r-si.
          teacher-ERG   child-OS-POSS.ESS   movie.ABS.IV IV-see-CAUS-PST.WIT
          'The teacher showed the children a movie.'

The same causativization pattern can be found with complex verbs of cognition and perception. Compare the intransitive verb *bič'zi* AGR-*oq-* 'be clear, be understood' and its transitive counterpart *bič'zi* AGR-*od-* 'make clear, explain':

(23) a. (kid-be-q)   sual   bič'zi   b-oq-x-ānu.
          girl-OS-POSS.ESS   question.ABS.III   understand   III-become-PRS-NEG
          'The question was not understandable (to the girl).'

      b. Učitel-ä   (kid-be-q)   sual   bič'zi
          teacher-ERG   girl-OS-POSS.ESS   question.ABS.III   understand
          b-oy-s.
          III-do-PST.WIT

'The teacher explained the question (to the girl).'

Note that finer semantic distinctions within the class of cognition/perception verbs do not predict which of the two patterns of causativization will occur. For example, the verb 'like' causativizes following Pattern B, while the verb 'dislike' uses the opposite pattern. And similarly, causativization turns the verb of seeing into a ditransitive, following Pattern B, but predicates denoting the other four senses follow Pattern A, causativizing into transitives.

In what follows, I will refer to those verbs that causativize into transitives (Pattern A) as *know*-verbs, and to those verbs that causativize into ditransitives (Pattern B) as *like*-verbs. These are just mnemonic labels, and I would like to underscore the arbitrary connection between their meaning and the syntactic structure they project: an important take-home message reminding us all that syntax and semantics are not related isomorphically.

3.2.   Reflexive binding

For reasons of space, I will only discuss reflexive binding. The formation and binding properties of reciprocals are very similar; see Polinsky & Comrie (2003) and Polinsky (2015).

3.2.1.   Tsez reflexives: Some basics

Reflexives in Tsez are complex, consisting of two parts. Their formation is based on two different strategies, both of which involve repetition of the relevant pronoun or demonstrative. In one of these formations, the first component of the compound reflexive appears in the oblique form (which corresponds to the ergative), and the second component appears in the case required by the verb or postposition that takes the reflexive as its argument or adjunct. The case of the entire compound reflexive is therefore expressed by the second component in the formation. This formation is available for all cases other than the ergative. In the second formation, the order of the constituents in the compound reflexive is reversed as compared to the first formation. The case called for by the governing verb or postposition appears on the first constituent, and the second constituent is in the absolutive. This formation is available for all cases other than the ergative and the absolutive (see Polinsky & Comrie 2003 for details). Reflexive forms also index the noun class of the antecedent (class I vs. all the others); in the glosses, the class is shown as a Roman numeral after the case form of the reflexive.

In transitive clauses with the ergative and absolutive argument, only the ergative can bind the reflexive in the absolutive-argument position (or adjuncts in various forms). The ergative cannot be bound by the absolutive, as shown in (24b). The linear order of the antecedent and anaphor is quite free (Comrie et al. 2013; Polinsky & Comrie 2003), and binding relations remain the same regardless of word order.

(24)　a.　Murad-ä　　　nesä　že　　goλ'i-n.

　　　　　　Murad-ERG　　REFL.ABS.I　　call-PST. nWIT

　　　　　　'Murad invited himself.'

　　　b.　*Murad　　　nesä　nes-ä　goλ'i-n.

　　　　　　Murad.ABS　　REFL.ERG.I　　call-PST. nWIT

　　　　　　'Murad invited himself.'

The binding pattern illustrated in (24) indicates that the ergative argument is structurally higher than the absolutive object. For other evidence that the ergative asymmetrically c-commands the absolutive, see Polinsky & Potsdam (2001, 2002), Gagliardi et al. (2014), Polinsky (2015). For the purposes of this paper, the relevant generalization is that a structurally dominant argument can bind into a lower position, but not vice versa.

3.2.2. Reflexive binding in the affective construction

If we now test binding with respect to the lative and absolutive arguments of the verbs of perception or cognition, we find a bifurcation that matches the division observed in causatives. In clauses with *know*-verbs, the lative argument can bind the absolutive but not vice versa. This binding pattern indicates that the lative argument is structurally higher than the absolutive.

(25)　a.　Irbahin-e-r　　　　　nesir　ža　　surat-yo-ł　　　　　　Ø-esu-s.

　　　　　　Ibrahim-OS-LAT　　　REFL.I.ABS　　picture-OS-CONT.ESS　I-find-PST.WIT

　　　　　　'Ibrahim found himself in the picture.'

　　　b.　*Irbahin　　nesä　nesi-r/nesir　ža　　surat-yo-ł　　　　　　Ø-esu-s.

　　　　　　Ibrahim.ABS　　REFL.I-LAT　　　　　　picture-OS-CONT.ESS　I-find-PST.WIT

In contrast, *like*-verbs allow binding both ways, from the lative to the absolute and vice versa. Consultants do not express a preference for one binding direction over the other. Thus, we do not see clear evidence of structural superiority between the arguments.

(26) a. Eniw-r   neła-r   ža   y-ukay-s.

mother-LAT   REFL. nI.ABS   II-see-PST.WIT

'Mother saw herself.'

b. Eniw   neł-ä   neła-r y-ukay-s.

mother.ABS.II REFL.nI-LAT   II-see-PST.WIT

'Mother saw herself.'

3.3. Verbs of perception or cognition in modal existential clauses

3.3.1. Masdar relative clauses: Basic facts

Tsez has several strategies for forming noun-modifying clauses. Among those, clauses with the participial predicate allow for relativization of pretty much any position on the Noun Phrase Accessibility Hierarchy (Keenan & Comrie 1977); for this type of relative clause formation, see Comrie & Polinsky (1999). Another type of noun-modifying clause, the one I will be concerned with here, includes clauses whose predicate is the deverbal noun (masdar) or infinitive. I will only consider masdars here, but the analysis of infinitival modifying clauses is similar. In what follows, I will be referring to masdar noun-modifying clauses as masdar relative clauses, abbreviated as MRCs. Since MRCs are not well studied, this section will present basics of their structure. Building on the understanding of general MRC structure, I will turn to MRCs with verbs of perception and cognition as predicates.

Tsez MRCs resemble English infinitival relative clauses such as the ones in (27):

(27) a. A man [for John to play against] is in the other room.

(Hackl & Nissenbaum 2012)

b. Here is a table [to put the lamp on].

c. The savior [to heal you] is coming.

English infinitival relatives have attracted the attention of many researchers (e.g., Bhatt 2006; Bolinger 1988; Caponigro 2003; Faraci 1974; Fleischer 2008; Green 1973; 1992; Hackl & Nissenbaum 2012; Šimik 2011, 2013a, b). The details of such relatives in English (and other familiar languages) tend to be quite complex, but the recurrent generalization is that such clauses also have a modal reading (e.g., *a table on which one could/should/would put the lamp*).

As in English, the referent of the noun modified by a Tsez MRC is construed as available in the eventuality denoted by the masdar, and Tsez MRCs exhibit the same modal range as infinitival relative clauses in English (see Bhatt 2006), including circumstantial possibility or weak necessity.

In some languages, Russian among them, infinitival relatives can be formed with a wh-word, as in (28). Tsez, however, does not have that formation, (29).

(28)   Tebe/U tebja   est'   [čto   poest' večerom]?
       2SG.DAT/by 2SG.GEN is   what   eat.INF in.the.evening
       'Do you have food to eat in the evening?'

(29)   a.   [r-ac'-ani-x]   šebin   yoł-ä   debe-q?
             IV-eat.TR-MSD-AD.ESS thing.ABS.IV be.PRS-INTERR   2SG-POSS.ESS
             'Do you have something to eat?'
       b.   *[šebi   r-ac'-ani-x]   yoł-ä   debe-q?
             what.ABS.IV   IV-eat.TR-MSD-AD.ESS be.PRS-INTERR   2SG-POSS.ESS
             (lit.: "Do you have what to eat?")

Tsez masdars are formed from the vP base, with the suffix *-ni* exponing the functional head *n*, which turns the verbal constituent into a deverbal nominal:

(30)   [$_{nP}$ [$_{VoiceP}$ DP [$_{vP}$ [$_{VP}$ DP V]]]]

Among other things, masdar structures have their own negation, distinct from the negation in tensed clauses, which underscores the relatively small structural size of these expressions.

Tsez arguments are licensed inside the vP and receive their case marking there (Gagliardi et al. 2014). Because of this low licensing position, the subject (or the highest argument, to be more precise) can be mentioned inside the MRC, just as in English (27a). Unlike English, where the highest argument has to be introduced by *for,* the highest argument in Tsez MRCs has the same case marking as in finite clauses; for instance, the ergative in (31) or the absolutive in (32):

(31)   [kid-b-ä   nełā neła-z   tuple-za-ƛ   teƛ-ani-x]   micxir

       girl-OS-ERG   REFL.nI-GEN1 shoe-OS.PL-SUB.ESS   pay-MASD-AD.ESS   money.ABS.III

       '(the) money for the girl to pay for her shoes'

(32)   [gulu   b-et'u-n   k'oƛ-ani-r]   huni

       horse.ABS.III   III-tear.away-PFV.CVB run- MASD-LAT   road.ABS.IV

       'the/a road for a/the horse to gallop on'

Assuming this line of analysis of masdars, MRCs behave as extended verbal projections under a nominalizing head, while at the same time having apparent relative-clause paraphrases.
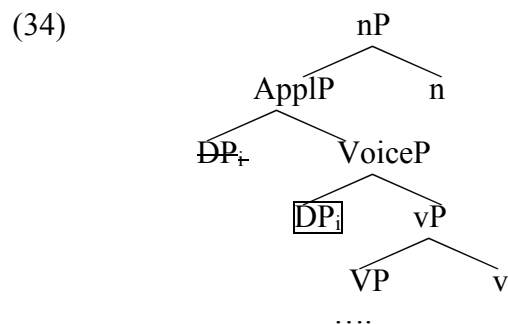
Let me return to interpretive properties of MRCs. In addition to their modal flavor, MRCs have a clear control reading; for example, they are impossible with non-volitional, inanimate subjects:

(33)   ??[isi   y-ay-ani-r]   zaman

         snow.ABS   II-go-MASD-LAT   time
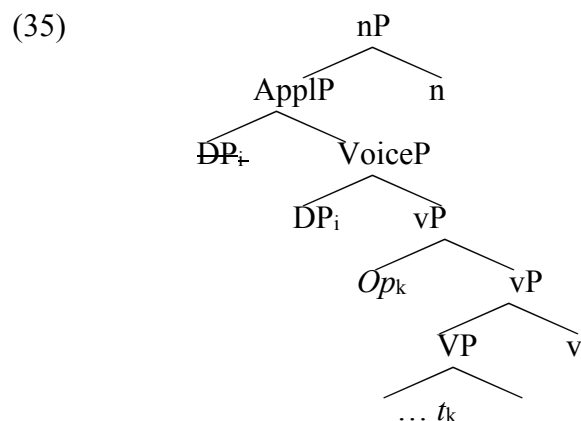
       ('the time for snow to fall')

The selectional restrictions indicate that an MRC includes a control predicate; not a completely novel finding, but one consistent with existing proposals for similar clauses in English (Hackl & Nissenbaum) and some other languages (Šimik 2011, 2013a, b). The MRC's highest argument (boxed in (34)) serves as the referent for whom the circumstantial possibility is established.

If this argument were introduced by an applicative head, similar to the English *for* (e.g., (27a)), we would expect uniform case marking in MRCs, contrary to fact. Assuming that the control relationship holds, the configuration is an instance of inverse or backward control, namely, the outcome of A-movement where the tail of the A-chain is spelled out rather than its

head. This is shown by strikethrough in (34). Tsez has backward control in other structures (Polinsky & Potsdam 2002; Polinsky 2015), but it remains unclear why backward control is obligatory in these relative clauses.

(34)

```
                    nP
                  /    \
              ApplP     n
             /    \
          DP̶ᵢ     VoiceP
                 /    \
              [DPᵢ]    vP
                      /  \
                    VP    v
                    ….
```

The verb phrase embedded under the controller includes an operator in spec,v, coindexed with a trace in the lower portion of the verb phrase; this is the constituent that is relativized (and coindexed with the overt noun phrase which serves as the head of an MRC).

(35)

```
                    nP
                  /    \
              ApplP     n
             /    \
          DP̶ᵢ     VoiceP
                 /    \
               DPᵢ     vP
                      /  \
                   Opₖ    vP
                         /  \
                       VP    v
                      /  \
                  … tₖ
```

The next set of generalizations has to do with the way MRCs combine with the external head. The MRC must appear either in the ad-essive or lative form; it cannot modify the head noun without spatial marking. In that regard, MRCs are different from infinitival relatives which do not require spatial marking. Further still, Tsez MRCs require an overt head noun.

These facts can be captured as follows: The nominalized verb phrase, (35), serves as the complement to the P head spelled out by lative or ad-essive. The resulting PP is adjoined to the noun which is construed as the head noun of the MRC:

(36)   [NP [PP [NP [MRC]] Padessive/lative] NPHead noun]

Because the MRC is encapsulated inside a PP it requires an overt head noun; the resulting expression is intended as a noun phrase, not a PP, and an invisible head would make this structure impossible to identify. (In contrast, infinitival clauses are not PPs, and can be headed by a null head nominal, giving an appearance of a headless relative clause.)

(37)
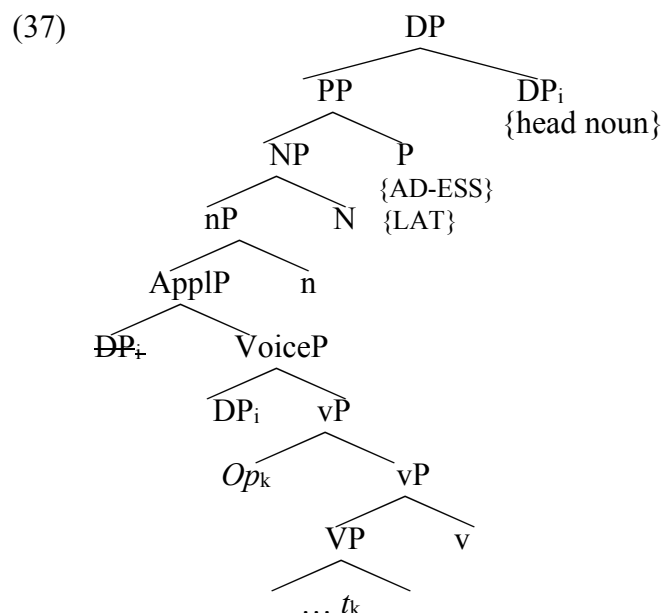
Finally, Tsez MRCs can include the subject (cf. (31) or (32)) but cannot modify that subject. In that regard they differ from English infinitival relatives which can modify the subject, as shown in (27c) above. To illustrate this latter restriction, consider (38) which can only mean that there is someone who could or should heal the doctor, but not that a doctor exists who could heal a patient.

(38)   [saɣ   od-ani-x]   doxtur
           health do-MASD-AD.ESS   doctor.ABS.I
           'the/a doctor that someone could/should heal'
           NOT: 'the doctor to do the healing'

The structure in (35) allows us to account for this restriction. In an MRC, only the material inside the vP can undergo A-bar movement. The subject in an MRC, which corresponds to the controller, is outside the domain from which the operator raises. Thus, this DP cannot be modified by a relative clause.

Table 2 summarizes the properties of Tsez MRCs. More work needs to be done to study these constructions; here, I only identified the facts that are relevant for the discussion of the affective construction.

Table 2   Tsez masdar relative clauses

Property	Explanation
Does not show properties of tensed clauses	Syntactically is a vP embedded under the nominalizing head *n*
Has a modal reading	Expresses the availability of some entity with respect to the event expressed by the VP
Must appear in a spatial form (AD-ESS or LAT)	Attaches to the head noun as a PP
Cannot appear without the head noun	MRC is a complement of P which adjoins to modified noun
Exhibits properties of control	Backward control between the argument introduced by ApplP and the subject in spec,Voice
The highest structural argument of the MRC cannot be the head noun	A-bar movement occurs in the portion of the masdar clause below the highest argument

3.3.2.   Verbs of cognition and perception in MRCs

Turning now to our cognition/perception verbs, they differ with respect to formation of MRCs.

With *know*-verbs, only the absolutive argument can be relativized with a masdar clause. Consider the following example, where (39a) is the baseline sentence:

(39)   a.   ɣˤana-za-r   čorpa-s   taʕam   b-iy-xosi   yol.

woman-OS.PL-LAT   soup-GEN   taste.ABS.III   III-know-PRS.PTCP   be.PRS

'The women are tasting the soup.'

b.   [ɣˤana-za-r   taʕam   b-iy-ani-x]   čorpa

woman-OS.PL-LAT   taste.ABS.III   III-know-MASD-AD.ESS   soup.ABS.IV

'soup for the women to taste'

c.   *[čorpa-s   taʕam   b-iy-ani-x]   ɣˤana-bi

soup-GEN   taste.ABS.III   III-know-MASD-AD.ESS   women-ABS.PL.nÍ

('women who could/should/would taste the soup')

Thus, the lative argument of *know*-verbs behaves as the subject or external argument with respect to an MRC. This accords well with its binding properties, given that it also asymmetrically binds the absolutive.

With *like*-verbs, both the absolutive and the lative can be modified by an MRC. In the following example, (40a) is the baseline sentence:

(40)   a.   ɣˤana-za-r   yedu   ħalt'i   b-eti-x.

             woman-OS.PL-LAT   DEM   work.ABS.III   III-want-PRS

             'Women like this kind of work.'

       b.   [ɣˤana-za-r   b-eti-x-ani-x]   ħalt'i

             woman-OS.PL-LAT   III-want-MASD-AD.ESS   work

             '(the) work that women could/would/should like'

       c.   [yedu   ħalt'i   b-eti-x-ani-x]   ɣˤana-bi

             DEM   work.ABS.III   III-want-MASD-AD.ESS woman-PL

             'women who could/would/should like that kind of work'

Let me underscore that these MRC patterns match the patterns of causative formation discussed in section 3.1 and the binding patterns discussed in section 3.2. Predicates that form the affective construction neatly divide into two classes with respect to all the criteria.

In addition to the cluster of properties discussed here, another area of divergence between the two types of verbs that form the affective construction has to do with coreference across clauses. The lative experiencer of *know*-verbs has priority over the absolutive in determining coreference across clauses; meanwhile, with *like*-verbs, both noun phrases seem to have equal access to such coreference.

A summary of the differences between the two types of cognition and perception verbs is given in Table 3.

Table 3. Structural differences across cognition/perception verbs.

	Verb type	
	'know', 'hear', 'feel, 'forget', 'find', 'dislike'	'like/love/want', 'see'
Causative formation	transitive volitional verbs with experiencer as ergative argument	ditransitive verbs with experiencer mapping to cause and an added causer argument
Reflexive binding	LAT binds ABS; *ABS binds LAT	LAT binds ABS; ABS binds LAT
Modification with MRC	Only ABS can be modified	Both ABS and LAT can be modified
Coreference across clauses	LAT has priority over ABS	LAT and ABS are equal in coreference-tracking

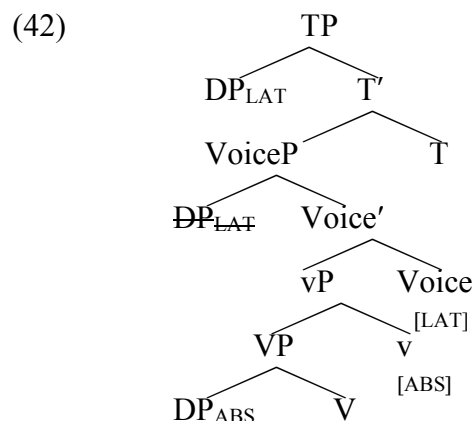In the next section, I will present an account that can capture these differences.

4. Analysis

The data presented so far indicate that the so-called affective construction is not uniform, and accordingly, even those verbs of perception and cognition that take the experiencer argument in the lative are not a coherent class either. Rather, there are two subclasses of perception and cognition verbs, the class I referred to as *know*-verbs and the class I termed *like*-verbs.

With respect to *know*-verbs, let us revisit sentence (13a), repeated below:

(41)   Aħoˁ-r   meši   b-esu-s.

        shepherd-LAT   calf.ABS.III III-find-PST.WIT

        'The shepherd found a/the calf.'

The lative argument in this clause has all the properties of subjects; in particular, it can asymmetrically bind an anaphor and can participate in control structure in an MRC. Further still, it can also participate in control structures when embedded in a regular infinitival clause (see Polinsky & Potsdam 2002: 252). These verbs typically do not form imperatives, for an obvious reason: positive imperatives must represent an intentional event, and one does not ordinarily issue a directive to someone to do something that is not under their intentional control.

Based on these considerations, the structure of clauses with *know*-verbs has the following representation:
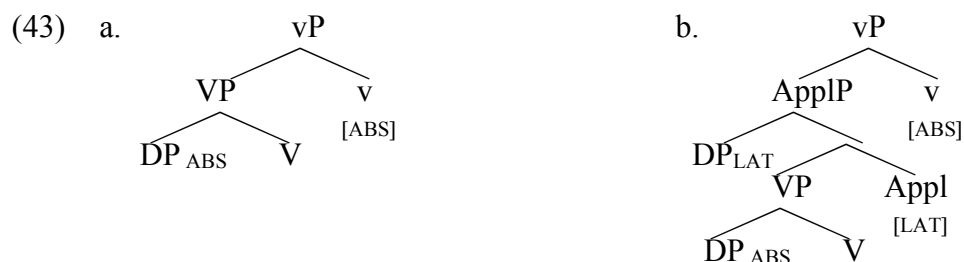
(42)

```
                      TP
              ┌───────┴───────┐
           DP_LAT            T'
        ┌────┴────┐      ┌────┴────┐
      VoiceP             T
   ┌────┴────┐
  DP̶_L̶A̶T̶    Voice'
          ┌────┴────┐
         vP         Voice
      ┌───┴───┐        [LAT]
     VP       v
  ┌───┴───┐      [ABS]
 DP_ABS    V
```

The internal argument gets its absolutive case from the functional head *v*, or if the configurational case licensing model is used, it gets the only case in its local domain. Nothing hinges on the choice between these two case licensing approaches. The verb root associated with this class of verbs can select for two types of Voice heads, one that introduces the external argument in the lative, as shown in (42), and the other, introducing the ergative external argument. The lative-assigning Voice head does not have a morphological exponent, whereas the head assigning ergative is spelled out as the -V*r*- marker, traditionally described as causative. By hypothesis, the lative argument raises to spec,T, to satisfy the EPP on that head. Both cases, the ergative and the lative, are thus inherent, and that characterization is consistent with the specific theta-role semantics associated with these forms.

This derivation is also consistent with the characterization of the lative argument as a non-canonical subject in other frameworks (e.g., Helasvuo & Huumo 2015) where the main insight is that a prototypical subject is characterized by a cluster of properties (following Keenan 1976), whereas a non-canonical subject lacks some such properties, which may be reflected in its meaning, grammatical encoding, and/or discourse function.

Turning now to *like*-verbs, the lative argument is not a subject; it is a structurally prominent argument of an unaccusative predicate, added through a process akin to applicativization. Such predicates have been described as applicative unaccusatives (see Režać 2008 for the term and for the analysis of the Basque *gustatu* 'like', and see also Baker 2014, 2015) or dyadic unaccusatives (e.g.., Davis & Demirdache 2000). Unlike the *know*-type verbs, these verbs do not project a Voice head. Instead, the unaccusative functional head *v* selects for a VP and assigns the absolutive to its internal argument, (43a). In the interpretation of such unaccusative structures, a

property is assigned to the referent of the absolute argument, such as 'X is visible' or 'X is pleasing'. In addition, the low applicative head inside the vP licenses an argument with the experiencer theta-role and assigns it the lative case, as shown in (43b).

(43)   a.

```
              vP
            /    \
         VP        v
        /  \      [ABS]
    DP ABS   V
```

   b.

```
              vP
            /    \
        ApplP      v
       /    \     [ABS]
   DP LAT    \
           VP    Appl
          /  \   [LAT]
      DP ABS   V
```

A dyadic unaccusative can either appear in a clause with an expletive subject in spec,T, as shown in (44a); alternatively, the internal absolutive argument can raise to that position, as in (44b):

(44)   a.   *expl*   debe-r   čorpa   b-eti-x-ānu.

             2SG-LAT   soup.ABS.IV   IV-like-PRS-NEG

             SUBJECT   APPLIED OBJECT   BASE OBJECT

       b.   čorpa   debe-r   b-eti-x-ānu.

             soup.ABS.IV   2SG-LAT   IV-like-PRS-NEG

             SUBJECT   APPLIED OBJECT

In the schema in (44a), the internal argument of the verb appears in its base position. In this realization, the applied (lative) object is higher than the base object and can bind it. Alternatively, in the schema in (44b), the internal argument of the applicative unaccusative raises to the subject position, in which case it is now higher than the lative object and can bind it. This results in the appearance of symmetrical binding in clauses with *like*-verbs.

Neither of the internal arguments of the unaccusative is in the right position to participate in the control relation in MRCs. And relatedly, verbs of this type do not participate in regular control structures—in contrast to *know*-verbs.

Finally, since the unaccusative structure does not have a Voice head associated with it, the causative morpheme -V*r*- expones the added Voice head, which licenses the transitive (ergative) argument associated with it. (In contrast, *know*-verbs are associated with a Voice layer, so the difference is only in the type of Voice and the case of the external argument.)

(45) Eni-y-ä   debe-q   yedu čorpa   b-et-ir-xo.

mother-OS-ERG   2SG-POSS.ESS DEM.nI soup.ABS.IV   IV-like-CAUS-PRS

'The mother is making/will make you like this soup.'

Note that the experiencer, which corresponds to the causee in (45), is no longer in the lative but is instead expressed by the poss-essive form, which is used for causees of transitives, (46b), where the poss-essive appears on the causee-agent.

(46)   a.   kid-b-ä   ac   y-uqi-s

girl-OS-ERG   door.ABS.II   II-close-PST.WIT

'The girl closed the door.'

b.   eni-y-ä   kid-be-q   ac   y-uq-ir-si.

mother-OS-ER girl-OS-POSS.ESS   door.ABS.II   II-close-CAUS-PST.WIT

CAUSER   CAUSEE

'The mother made the girl close the door.'

The case on the experiencer-turned-causee suggests that this argument is licensed by a different applicative head, arguably higher than the applicative projected in a dyadic unaccusative (more work is indeed to determine its exact position). The syntax of causative structures in Nakh-Dagestanian is awaiting further study, but for the purposes of the current discussion, the contrast between poss-essive and lative will suffice.

5. Conclusions

Tsez data lend novel support to the generalization that the theta-grid of verbs expressing psychological states can be projected into a number of syntactic configurations, and in an apparently arbitrary way (Belletti & Rizzi 1988). Further still, Tsez shows that what is traditionally described as the affective construction is not uniform either. The surface encoding of the experiencer in the lative and stimulus in the absolutive stands for two different structures identifiable through a number of syntactic diagnostics: a structure with a regular transitive verb whose subject is in the lative, and a structure with a dyadic unaccusative where the absolutive

internal argument may optionally move to the subject position. The association between individual verbs of perception and cognition with one of these structures is arbitrary and cannot be predicted on the basis of their lexical semantics.

If this analysis is on the right track, it has implications for case licensing issues both in Tsez and beyond. With respect to Tsez, we end up with at least two inherent cases, ergative and lative, licensed by different Voice heads. An alternative that I did not explore here has to do with the difference in the nature of the verbal categorizer (*v*), which then combines with one and the same Voice head; under this solution, case licensing would be mediated by the interaction of different *v* heads with a single Voice head. I leave the decision between these options for future research. This particular question of case licensing is also related to a larger issue having to do with the ways ergative case is assigned. It is rather uncontroversial that there is more than one way to assign ergative (Legate 2008; Polinsky 2016, among others), and Nakh-Dagestanian data call for an inherent case analysis (see Gagliardi et al. 2014), but this issue could be explored further.

The empirical data in this paper open up two new areas of inquiry. The first one has to do with the structure of masdar modal existential clauses, which denote properties of availability in hypothetical situations. These clauses co-exist with infinitival modal existential clauses (which I did not discuss here); their semantics is quite similar to that of infinitval relatives in other languages, including where it has been investigated in more detail (e.g., Hackl & Nissenbaum 2012), and further comparative work that includes Tsez MRCs in the family of infinitival relatoves would be welcome. In contrast to the semantics of MRCs, their syntax is far less clear. I have proposed a tentative analysis for Tsez which should be explored further.

Several analytical moves in this paper involved positing additional applicative heads in the clausal structure. Adding new projections should never be taken lightly, and further work on the inventory and placement of applicative heads in the clausal spine of Tsez (and Nakh-Dagestanian more generally).

Acknowledgments

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