Passivization and recursive passivization: a causative coercion account

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Outline of the talk

- Passive in Karachay-Balkar: The puzzle
- Coercion: An overview
- Causal passive and causative
- Passivization and recursive passivization
- Example derivations

The puzzle

□ Passive construction in Karachay-Balkar (<Altaic, Turkic; Kabardino-Balrakskaya Republic; Russia)

☞ Lyutikova et al. 2006, Lyutikova&Bonch-Osmolovskaya 2006

(1) a. kölek   (kerim-ni   küc-ü   ble)   zırt-**ıl**-dı.

    shirt.nom K.-gen   force-3 with   tear-**pass**-pst.3sg

      'A/the shirt was torn by Kerim.'

  b. kerim   kölek-ni   zırt-tı.

    K.nom   shirt-acc   tear-pst.3sg

     'Kerim tore a/the shirt.'

The puzzle

(1) a. kölek   (kerim-ni küc-ü   ble)   zırt-**ıl**-dı.
       shirt.nom K.-gen   force-3 with   tear-**pass**-pst.3sg

       'A/the shirt was torn by Kerim.'

   b. kerim   kölek-ni   zırt-tı.
       K.nom   shirt-acc   tear-pst.3sg

       'Kerim tore a/the shirt.'

(1a): prototypical passive construction:

- the direct object of (1b) is promoted to the subject position in (1a);
- the subject of (1b) is expressed in (1a) as an optional PP;
- passivization is morphologically marked by the *-l* morpheme.

The puzzle

Two puzzles of Balkar passive:

- ❑ passives of non-derived intransitives

(2) alim bar-**ıl**-dı.
 A.nom leave-**pass**-pst

 'Alim left.'

- ❑ recursive passivization

(3) kölek zırt-**ıl**-**ın**-dı.
 shirt tear-**pass**-**pass**-pst

 'The shirt was torn.'

The puzzle

Passives of intransitives

the passive does not apparently affect core syntactic relations, but rather introduces the **meaning of external causation** ('*causal passive*')

- ☐ unaccusative

(4) a. illew   (*alim-ni kücü ble)   sın-dı.
    toy.nom Alim-gen force with   break-pst.3sg

   'The toy broke (*by Alim).'

  b. illew   alim-ni   kücü   ble   sın-**ıl**-dı.
    toy.nom Alim-gen   force   with   break-**pass**-pst.3sg

   'The toy was broken by Alim.'

The puzzle

Passives of intransitives

- unergative

(5) a. alim (*farida-nı kücü ble)   bar-dı.
     A.nom F.-gen   force with   leave-pst

   'Alim left (*by Farida).'

   b. alim   farida-nı kücü ble   bar-**ıl**-dı.
       A.nom F.-gen   force with leave-**pass**-pst

   'Alim left (because something was done) by Farida.'

The puzzle

□ Verbal agreement

(6) a. cojun   tol-du.   b. cojun-**la**   tol-du-**la**.
      pot.nom fill.intr-pst.3sg   pot-**pl.nom**   fill.intr-pst-**3pl**

        'The pot filled.'   'The pots filled.'

(7) a. cojun   tol-un-du.   b. cojun-**la**   tol-un-du-**la**.
      pot.nom   fill.intr-pass-pst.3sg   pot-**pl.nom** fill.intr-pass-pst-**3pl**

        'The pot was filled.'   'The pots were filled.'

□ (6a-b), intransitive verb: the subject 'pot(s)' triggers verbal agreement.

□ (7a-b), intransitive verb + passive morphology: the same subject 'pot(s)' triggers verbal agreement.

The puzzle

- External causation

(4) a. illew   (*alim-ni kücü ble)   sın-dı.
    'The toy broke (*by Alim).'

   b. illew   alim-ni   kücü   ble   sın-ıl-dı.
    'The toy was broken by Alim.'

(5) a. alim   (*farida-nı kücü ble)   bar-dı.
    'Alim left (*by Farida).'

   b. alim   farida-nı kücü ble   bar-**ıl**-dı.
    'Alim left (because something was done) by Farida.'

- (4a) and (5a) do not accept PPs referring to the external causer.
- In (4b) and (5b), which indicate that a situation occurs due to external causation, such PPs are readily available.

The puzzle

Recursive passivization

□ recursive passivization of transitives

(8) a. kölek   (kerim-ni küc-ü ble)   zırt-**ıl**-dı.

shirt.nom K.-gen   force-3 with   tear-**pass**-pst.3sg

'A/the shirt was torn by Kerim.'

b. kölek   (kerim-ni küc-ü ble)   zırt-**ıl-ın**-dı.

shirt.nom K.-gen   force-3 with   tear-**pass-pass**-pst.3sg

1.'A/the shirt was torn by Kerim (on someone's order).'

2. 'A/the shirt was torn (by someone) on Kerim's order.'

The puzzle

Recursive passivization

☐ recursive passivization of intransitives

(9) a. alim　　　(kerim-ni　küc-ü　ble)　　　bar-**ıl**-dı.

　　　A.nom　K.-gen　　force-3 with　　　leave-**pass**-pst.3sg

　　　'Alim left (because something was done) by Kerim.'

　b. alim　　　(kerim-ni　küc-ü　ble)　　　bar-**ıl-ın**-dı.

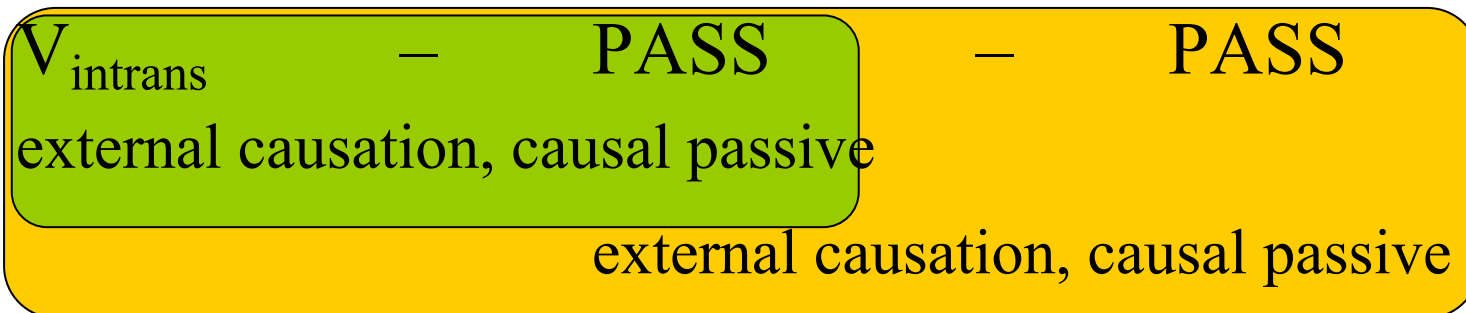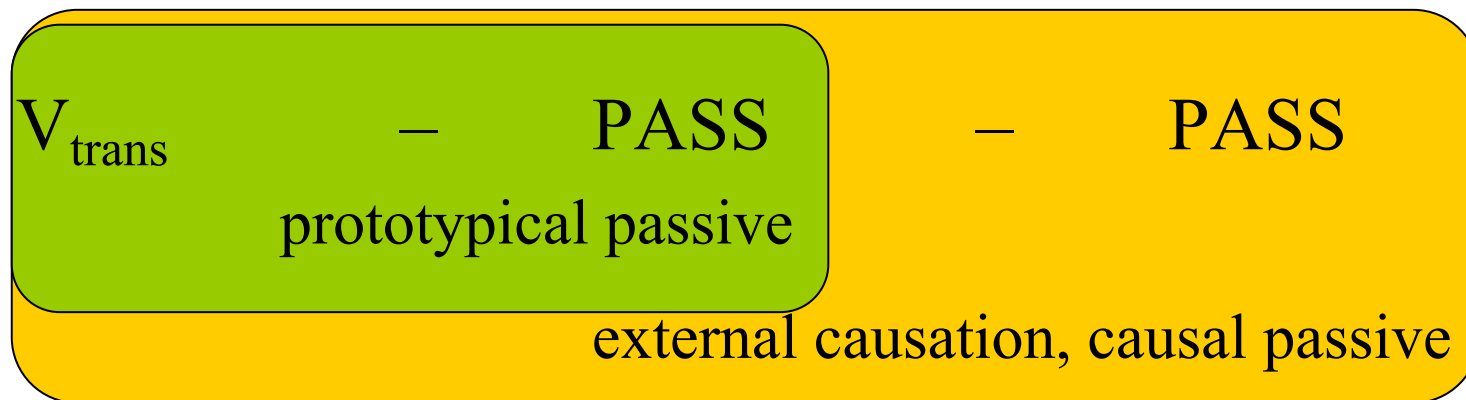　　　A.nom　　K.-gen　　force-3 with　　　leave-**pass-pass**-pst.3sg

　　1. 'Alim left (because something was done by Kerim on someone's order).'

　　2. 'Alim left (because something was done by someone on Kerim's order).'

The puzzle

Recursive passivization

The second passive morpheme always introduces the external causation

V_{trans} — PASS — PASS
prototypical passive
external causation, causal passive

$V_{intrans}$ — PASS — PASS
external causation, causal passive
external causation, causal passive

The puzzle

- Given that passivization creates an intransitive verbal predicate, we can account for recursive passivization by assuming the following distribution of passive morpheme(s):

Transitive stem   + PASS ⇨ prototypical passive

Intransitive stem + PASS ⇨ causal passive

- Thus, availability of recursive passivization is bound to existence of the causal passive construction.

- But what about the relation between prototypical and causal passives?

The puzzle

Two possible perspectives to address the 'causal passive'.

- **grammatical polysemy**: 'passive' and 'causal passive' are distinct meanings/uses of *-l*.

- **uniform analysis** of the *-l* morpheme, whereby apparent differences is a product of interaction between a single general meaning of *-l* and its lexico-syntactic environment.

'Causal passive' is a product of causative coercion

The puzzle

Outline of the proposal:

- the -*l* morpheme always applies to a **transitive predicate**;

- the -*l* morpheme existentially binds the Agent/causer argument, as assumed in a number of semantic analyses of the passive (e.g., Kramer, Wunderlich 1999, Wunderlich 1997), and induces promotion of the Patient to the subject position;

- if a verb provides a suitable argument structure, which is the case with transitives like *zırt* 'tear', the -*l* morpheme produces a 'normal' passive, as in (1a);

- if a predicate does not have a transitive argument structure, the verb undergoes **coercion** through **covert causativization**. Causativization introduces a new agent/causer argument, as usually, thus creating a transitive structure.

The puzzle

Predicates with intransitive argument structure:

- non-derived intransitives (both unaccusatives and unergatives)
- derived intransitives:
  - ✓ passives of transitives (prototypical passives)
  - ✓ passives of intransitives (causal passives)

These classes of predicates undergo **causative coercion** in order to combine with the passive morpheme.

Coercion

✧ Moens & Steedman 1988, Jackendoff 1997, de Swart 1998, Zucchi 1998, Michaelis 2004, Deal 2007, among many others.

❑ "Let d be a syntactic constituent of form $[_a$ b c] and R the semantic rule which forms the meanings of the constituents of type a. If combining the meanings of b and c via R leads to trouble (for example, leads to inconsistency or prevents from assigning an interpretation to d), the speaker has the option of re-analyzing the meaning of b or c (coercing the meaning of b or c into a different meaning) in order to apply R to form the meaning of d." (Zucchi 1998)

Coercion

- Moens & Steedman 1988, Jackendoff 1997, de Swart 1998, Zucchi 1998, Michaelis 2004, Deal 2007, among many others.
- "The idea of coercion is that if the meanings of two elements in an utterance conflict with one another, then a language user might find a way of repairing this conflict so that the utterance actually ends up having some sort of coherent meaning. If coercion doesn't occur in this context, the two meanings cannot compose." (Kootnz-Garboden 2007)

Coercion

- Type coercion
- Domain structure coercion
- Aspectual coercion
- Causative coercion

Coercion

Type coercion

A semantic operation that converts an argument to the type which is expected by a function, where it would otherwise result in a type error. (e.g., Pustejovsky 1995)

□ Property-coerced names

(10) a. This is not the *Paris* I know.
      b. There is a *Santa Claus*.

Proper names are used as property-type NPs, not referential NPs

Coercion

Type coercion

- Metonymic Type Coercion

☞ Coulson&Fauconnier 1999, Pustejovsky 1995, Kamp&Partee 1995, Partee 2001, Kluck 2006.

(11) a. a stone *lion*
    b. a fake *gun*
    c. a chocolate *teapot*

The adjective forces the noun to be interpreted as an image of itself. The phenomenon is best explained as a collision between respective meanings of combined words, resulting in an ontological type-shift.

Coercion

Type coercion

- Object-event coercion

☞ Anick&Bergler 1991, Pustejovsky 1991, Jayez&Godard 1993

(12) a. to begin reading the book.
　　　 b. to begin *the book*.

(13) a. to want to read the book.
　　　 b. to want *the book*.

A phrase of type **e** (object) is coerced to a phrase of type **s** (event) under the influence of the predicate. Assuming type coercion, one can explain how verbs like *begin* and *want* can accept arguments of syntactic type S, VP, and NP without requiring multiple verb entries in the lexicon.

Coercion

Domain structure coercion

(14)   I had a *tea*.

(15)   Give me some *blanket*

A mass noun like *tea* receives an individuated construal when it is paired with the indefinite article (14), and a count noun receives a mass construal when paired with unstressed *some*, as in (15). If domains from which count and mass nouns take their denotations are structured in different ways, the latter being non-atomic (Link 1983 and much subsequent literature), in (14)-(15) domains of *tea* and *blanket* must be restructured before combining with determiners.

Coercion

Aspectual coercion

- Coercion induced by aspectual operators

  The most clear-cut examples of aspectual reinterpretation arise when an eventuality description does not meet the input requirements of an aspectual operator, and we get an adjustment, a coerced interpretation of the input, which repairs the mismatch. (De Swart 2000)

(16) a. Susan *is liking* this play a great deal.
      b. Peter *is believing* in ghosts these days.
      c. Charles *is being silly*.

The state is coerced into a dynamic eventuality to meet requirements imposed by the progressive.

Coercion

Aspectual coercion

- Coercion induced by adverbials

(17) a. Suddenly, I *knew* the answer

    b. She *played* sonata for three hours

(17a): the state predicate is coerced into a change of state predicate

(17b): the accomplishment predicate is coerced into an iterative predicate

Coercion

Aspectual coercion

- Coercion induced by adverbials

(18)   Tonga (Kootnz-Garboden 2007):

a. #'Oku   loloa   ho   'ulu.
   IPFV   long   your   hair

   1. 'Your hair is long. '
   2. *'Your hair is getting long.'

b. 'Oku   loloa   vave   ho   'ulu.
   IPFV   long   fast   your   hair

   'Your hair is quickly getting long. '

Coercion

Causative coercion

(19) $Op_{trans}(V_{intrans}) \rightarrow Op_{trans}(CAUS(V_{intrans}))$

> where Op_{trans} is an operator that selects for transitive verbs, and CAUS is a covert causative operator

> Derivations along the lines of (19) have not been attested so far. However, we argue that this is what happens in Balkar when the passive morpheme attaches to an intransitive verb stem:

(20) $-l\text{-}_{PASS}(V_{intrans}) \rightarrow -l\text{-}_{PASS}(CAUS(V_{intrans}))$

Coercion

Causative coercion

(20) $-l\text{-}_{\text{PASS}}\,(\text{V}_{\text{intrans}}) \rightarrow -l\text{-}_{\text{PASS}}\,(\text{CAUS}(\text{V}_{\text{intrans}}))$

- If (20) is correct, it predicts a strict parallelism between causal passives and true causatives, since what happens if the passive morpheme attaches to intransitives is essentially a causativization. Hence comparing causal passives with causatives provides suitable diagnostics for (20).
- Besides, if (20) is essentially a coercion phenomenon we should not find $\text{CAUS}(\text{V}_{\text{intrans}})$ in any environment other than in combination with $-l\text{-}_{\text{PASS}}$.

Coercion

Causative coercion

(20) $\text{-}l\text{-}_{\text{PASS}}(V_{\text{intrans}}) \rightarrow \text{-}l\text{-}_{\text{PASS}}(\text{CAUS}(V_{\text{intrans}}))$

In Balkar, evidence for (20) comes from two observations:

- Intransitives combined with the passive morphology pattern with (overt) causatives with respect to
  - ✓ semantic type of causation
  - ✓ interpretation of agent-oriented adverbials
  - ✓ interpretation of time span and rate adverbials
  - ✓ scope of negation
- The shift of V_{intrans} into $\text{CAUS}(V_{\text{intrans}})$ can only occur if V_{intrans} is an argument of the passive operator.

Causative coercion in Balkar

Discovering parallelism between the causative and the causal passive:

- passive of unaccusative vs. causative of unaccusative
- passive of unergative vs. causative of unergative

Arguing for the *causal-passive*-analysis of recursive passivization:

- passive vs. double passive of transitives

Causative coercion in Balkar: passive vs. causative

	Unaccusative		Unergative	
	causative	passive	causative	passive
Type of causation	direct	direct	indirect	indirect
Scope of time-span and rate adverbials	unambiguous	unambiguous	three-way ambiguous	three-way ambiguous
Interpretation of agent-oriented adverbials	unambiguous	unambiguous	two-way ambiguous	two-way ambiguous
Scope of *zaŋıdan* 'again'	two-way ambiguous	two-way ambiguous	two-way ambiguous	two-way ambiguous
Scope of negation	unambiguous	unambiguous	two-way ambiguous	two-way ambiguous

Causative coercion in Balkar: passive vs. causative

Type of causation

□ Passive of unaccusatives: direct

(21) butaq   (alim-ni kücü ble)   sın-ıl-dı.
     branch.nom Alim-gen force   with break.intr-pass-pst.3sg

    1. 'The branch was broken (by Alim).
    2. * The branch was caused to break by Alim.'

□ Causative of unaccusatives: direct

(22) alim   butaq-nı   sın-dır-dı.
     Alim.nom branch-acc   break.intr-caus-pst.3sg

    1. 'Alim broke the branch.
    2. *'Alim caused the branch to break.'

Causative coercion in Balkar: passive vs. causative

Type of causation

- Passive of unergatives: indirect

(23) kerim   cab-ıl-dı.

    Kerim.nom run-pass-pst.3sg

    'Kerim was caused || allowed || asked || convinced... to run.'

- Causative of unergatives: indirect

(24) alim   kerim-ni   cap-tır-dı.

    Alim.nom Kerim-acc   run-caus-pst.3sg

    'Alim caused || allowed || asked || convinced... Kerim to run.'

Causative coercion in Balkar: passive vs. causative

	Unaccusative		Unergative	
	causative	passive	causative	passive
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Scope of time-span and rate adverbials	unambiguous	unambiguous	three-way ambiguous	three-way ambiguous
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Scope of *zaŋıdan* 'again'	two-way ambiguous	two-way ambiguous	two-way ambiguous	two-way ambiguous
Scope of negation	unambiguous	unambiguous	two-way ambiguous	two-way ambiguous

Causative coercion in Balkar: passive vs. causative

Scope of time-span adverbials

- ☐ Passive of unaccusatives: unambiguous

(25) cojun beš minut-xa tol-un-du.
   pot.nom five minute-dat fill.intr-pass-pst.3sg
 1. 'The pot was filled in five minutes.'
 2. *'Some event that happened in five minutes made the pot fill.'
 3. *'Some event made the pot fill in five minutes.'

- ☐ Causative of unaccusatives: unambiguous

(26) alim beš minut-xa cojun-nu tol-dur-du.
   Alim.nom five minute-dat pot-acc fill.intr-caus-pst.3sg
 1. 'Alim filled the pot in five minutes.'
 2. *'What Alim did in five minutes was make a/the pot fill.'
 3. *'What Alim did was make a/the pot fill in five minutes.'

Causative coercion in Balkar: passive vs. causative

Scope of time-span adverbials

- **Passive of unergatives: three-way ambiguous**

(27) kerim   beš   minut-xa   škol-ʁa   cab-ıl-dı.
    Kerim.nom   five   minute-dat school-dat   run-pass-pst.3sg
    1. 'Kerim was made run to the school in five minutes.'
    2. 'Some event that happened in five minutes made Kerim run to the school.'
    3. 'Some event made Kerim run to the school in five minutes.'

- **Causative of unergatives: three-way ambiguous**

(28) alim   beš minut-xa   kerim-ni   škol-ʁa   cap-tır-dı.
    Alim.nom   five minute-dat   Kerim-acc school-dat   run-caus-pst.3sg
    1. 'Alim made Kerim run to the school in five minutes.'
    2. 'What Alim did in five minutes was make Kerim run to the school.'
    3. 'What Alim did was make Kerim run to the school in five minutes.'

Causative coercion in Balkar: passive vs. causative

	Unaccusative		Unergative	
	causative	passive	causative	passive
Type of causation	direct	direct	indirect	indirect
Scope of time-span and rate adverbials	unambiguous	unambiguous	three-way ambiguous	three-way ambiguous
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Scope of *zaŋıdan* 'again'	two-way ambiguous	two-way ambiguous	two-way ambiguous	two-way ambiguous
Scope of negation	unambiguous	unambiguous	two-way ambiguous	two-way ambiguous

Causative coercion in Balkar: passive vs. causative

Scope of negation

- Passive of unaccusatives: unambiguous

(29) cojun   tol-un-ma-dı.
     pot.nom   fill.intr-pass-neg-pst.3sg

 'The pot was not filled.'

- Causative of unaccusatives: unambiguous

(30) alim   cojun-nu   tol-dur-ma-dı.
     Alim.nom   pot-acc fill.intr-caus-neg-pst.3sg

 'Alim didn't fill the pot.'

Causative coercion in Balkar: passive vs. causative

Scope of negation

- Passive of unergatives: two-way ambiguous

(31) kerim   škol-ʁa   cab-ıl-ma-dı.
     Kerim.nom school-dat   run-pass-neg-pst.3sg

    1. 'Kerim was not caused to run to the school (he did so without any order).'

    2. 'Kerim was caused not to run to the school.'

- Causative of unergatives: two-way ambiguous

(32) alim   kerim-ni   škol-ʁa   cap-tır-ma-dı.
     Alim.nom   Kerim-acc   school-dat   run-caus-neg-pst.3sg

    1. 'Alim didn't make Kerim run to the school (Kerim ran without his order).'

    2. 'Alim made Kerim not run to the school.'

Causative coercion in Balkar: passive vs. causative

	Unaccusative		Unergative	
	causative	passive	causative	passive
Type of causation	direct	direct	indirect	indirect
Scope of time-span and rate adverbials	unambiguous	unambiguous	three-way ambiguous	three-way ambiguous
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Scope of negation	unambiguous	unambiguous	two-way ambiguous	two-way ambiguous

Causative coercion in Balkar: passive vs. double passive

- Semantic difference between the passive and double passive of transitives: double passives denote complex events containing one causing event more than simple passives.

- This additional causing subevent can constitute the scope of a number of semantic operators:
  - ✓ time-span and rate adverbials
  - ✓ agent-oriented adverbials
  - ✓ adverbials of repetition ('again')
  - ✓ negation

Causative coercion in Balkar: passive vs. double passive

	Passive of transitives *zırt-ıl* 'tear-PASS'	Double passive of transitives *zırt-ıl-ın* 'tear-PASS-PASS'
Scope of time-span and rate adverbials	unambiguous	three-way ambiguous
Agent-oriented adverbials	unambiguous	two-way ambiguous
Scope of *zaŋıdan* 'again'	two-way ambiguous	three-way ambiguous
Scope of negation	unambiguous	three-way ambiguous

Causative coercion in Balkar: passive vs. double passive

Scope of time-span adverbials

❑ Passive of transitives

(33) kölek   eki minut-xa   kerim-ni   kücü   ble   zırt-ıl-dı.
    shirt   two minute-dat   K.-gen   force   with   tear-pass-pst.3sg
    'The shirt was torn by Kerim in two minutes.'

❑ Double passive of transitive

(34) kölek   eki minut-xa   kerim-ni kücü ble   zırt-ıl-ın-dı.
    shirt   two minute-dat   K.-gen   force with   tear-pass-pass-pst.3sg
    1. 'The shirt was torn by Kerim on someone's order in two minutes.'
    2. 'The shirt was torn by Kerim because someone convinced him in two minutes to do so.'
    3. 'The shirt was torn in two minutes by Kerim, because someone ordered him to do so'.
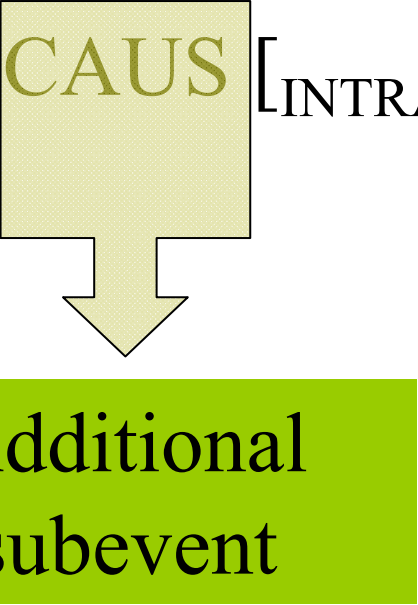
Causative coercion in Balkar: passive vs. double passive

	Passive of transitives *zırt-ıl* 'tear-PASS'	Double passive of transitives *zırt-ıl-ın* 'tear-PASS-PASS'
Scope of time-span and rate adverbials	unambiguous	three-way ambiguous
Agent-oriented adverbials	unambiguous	two-way ambiguous
Scope of *zaŋıdan* 'again'	two-way ambiguous	three-way ambiguous
Scope of negation	unambiguous	three-way ambiguous

Causative coercion in Balkar: passive vs. double passive

$$*[\ -l\ [_{\text{INTRANS}}\ -l\ [\ldots\ V_{\text{TRANS}}\ \ldots\ ]]]$$

$$[\ -l\ [_{\text{TRANS}}\ \text{CAUS}\ [_{\text{INTRANS}}\ -l\ [\ldots\ V_{\text{TRANS}}\ \ldots\ ]]]]$$

Additional subevent

Causative coercion in Balkar

The summary of the argument

- In all relevant respects (semantic type of causation, scope of adverbials, etc.) causal passives and causatives are identical. If the derivation of causal passives involves covert causativization, the identity falls out naturally. Otherwise, it comes out as a mysterious coincidence.

- The double passive possesses an additional causing subevent. On the proposed analysis, this follows from the fact that the simple passive is essentially intransitive, hence the second occurrence of the passive morpheme induces causative coercion.

Example derivations

Semantic representation

(simplified; irrelevant details about unaccusative/unergative distinction, as well as their differences as to the adverbials scope are ignored)

☐ Coercion operator:

$$\|CAUS\| = \lambda P \lambda x \lambda e \exists e'[P(e') \wedge Agent(x)(e) \wedge cause(e')(e)]$$

☐ Passive:

$$\| -l- \| = \lambda R \lambda e \exists x[R(x)(e)]$$

Example derivations

$\| \text{CAUS} \| = \lambda P \lambda x \lambda e \exists e'[P(e') \land \text{Agent}(x)(e) \land \text{cause}(e')(e)]$

$\| \textit{-l-} \| = \lambda R \lambda e \exists x[R(x)(e)]$

- The coercion operator CAUS takes an event predicate of the logical type $<s,t>$ and returns a two-place relation between individuals and events. It existentially binds an event from the original extension of the event predicate, and introduces a causing event as well as a participant of that event.

- The passive morpheme takes a relation between individuals and events and returns an event predicate, existentially binding an individual.

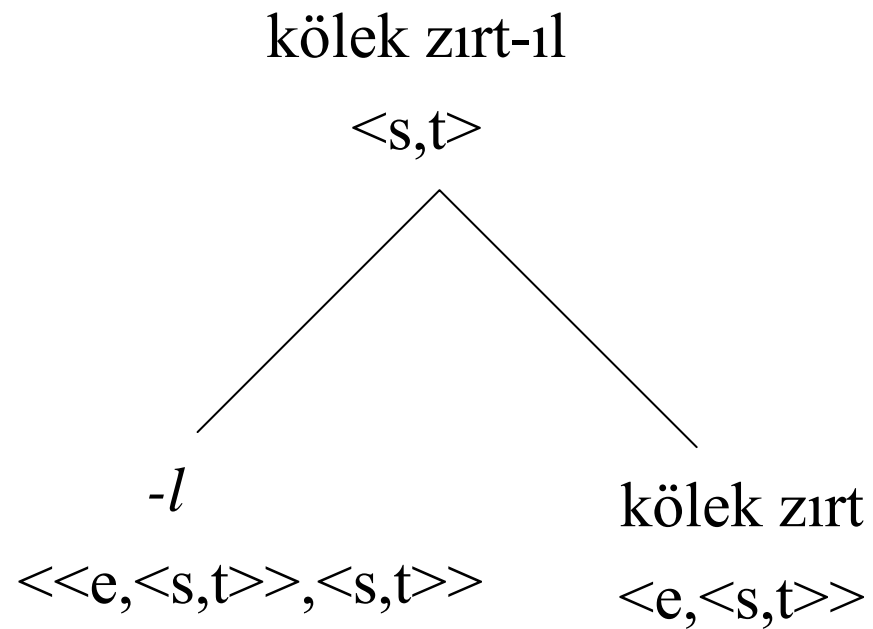- Causativization creates a suitable input for passivization.

Example derivations

Passive of transitives

(35) kölek   (kerim-ni   küc-ü ble)   zırt-ıl-dı.
      shirt.nom K.-gen   force-3 with   tear-pass-pst.3sg

       'The shirt was torn by Kerim.'

Example derivations

Passive of transitives

kölek zırt-ıl

<s,t>

-l
<<e,<s,t>>,<s,t>>

kölek zırt
<e,<s,t>>

Example derivations

Passive of transitives

(36) a. **Transitive verb:**

$\| \text{zırt} \| = \lambda y \lambda x \lambda e \exists e'[\text{tear}(y)(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$

   b. **Saturation:**

$\| \text{kölek zırt} \| = \lambda y \lambda x \lambda e \exists e'[\text{tear}(y)(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)](\text{shirt}) =$
$= \lambda x \lambda e \exists e'[\text{tear}(\text{shirt})(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$

   c. **Passive:**

$\| \text{-}l\text{-} \| = \lambda R \lambda e \exists x[R(x)(e)]$

   d. **Passivization:**

$\|\text{-}l\text{-} [\text{kölek zırt}] \| = \lambda R \lambda e \exists x[R(x)(e)](\lambda x \lambda e \exists e'[\text{tear}(\text{shirt})(e') \wedge \text{Agent}(x)(e)$
$\wedge \text{cause}(e')(e)] =$
$= \lambda e \exists x \exists e'[\text{tear}(\text{shirt})(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$
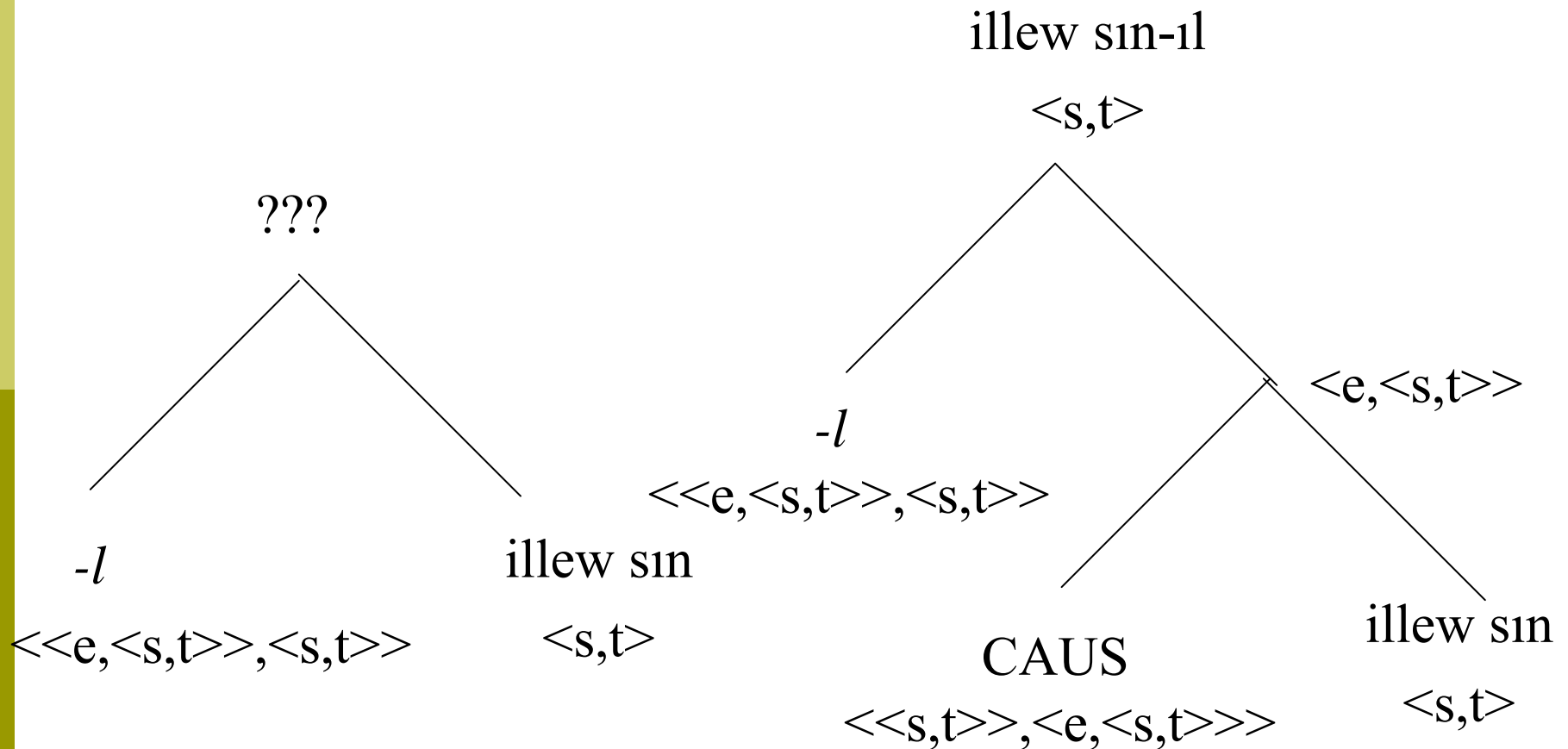
Example derivations

Passive of intransitives

(37) illew   (alim-ni   kücü   ble)   sın-ıl-dı.
     toy.nom   Alim-gen   force with break-pass-pst.3sg

       'The toy was broken (by Alim).'

Example derivations

Passive of intransitives

illew sın-ıl

\<s,t>

???

-l
\<\<e,\<s,t>>,\<s,t>>

\<e,\<s,t>>

-l
\<\<e,\<s,t>>,\<s,t>>

illew sın

\<s,t>

CAUS
\<\<s,t>>,\<e,\<s,t>>>

illew sın

\<s,t>

Example derivations

Passive of intransitives

(38) a. **Unaccusative verb:**

$\| \text{sın} \| = \lambda x \lambda e.\text{break}(x)(e)$

b. **Saturation:**

$\| \text{illew sın} \| = (\lambda x \lambda e.\text{break}(x)(e))(\text{toy}) = \lambda e.\text{break}(\text{toy})(e)$

c. **Coercion operator:**

$\| \text{CAUS} \| = \lambda P \lambda x \lambda e \exists e'[P(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$

d. **Coercion:**

$\| \text{CAUS (illew sın)} \| = \lambda P \lambda x \lambda e \exists e'[P(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$
$(\lambda e.\text{break}(\text{toy})(e)) =$
$\qquad \lambda x \lambda e \exists e'[\text{break}(\text{toy})(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$

Example derivations

Passive of intransitives

(38) d. **Coercion:**

$\| \text{CAUS (illew sın)} \| = \lambda P \lambda x \lambda e \exists e'[P(e') \wedge \text{Agent}(x)(e) \wedge$
$\text{cause}(e')(e)](\lambda e.\text{break(toy)}(e)) =$
$\lambda x \lambda e \exists e'[\text{break(toy)}(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$

e. **Passive:**

$\| \text{-}l\text{-} \| = \lambda R \lambda e \exists x[R(x)(e)]$

f. **Passivization:**

$\|\text{-}l\text{- CAUS([illew sın])} \| = \lambda R \lambda e \exists x[R(x)(e)](\lambda x \lambda e \exists e'[\text{break(toy)}(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]) =$
$\lambda e \exists x \exists e'[\text{break(toy)}(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$

Example derivations

Recursive passive
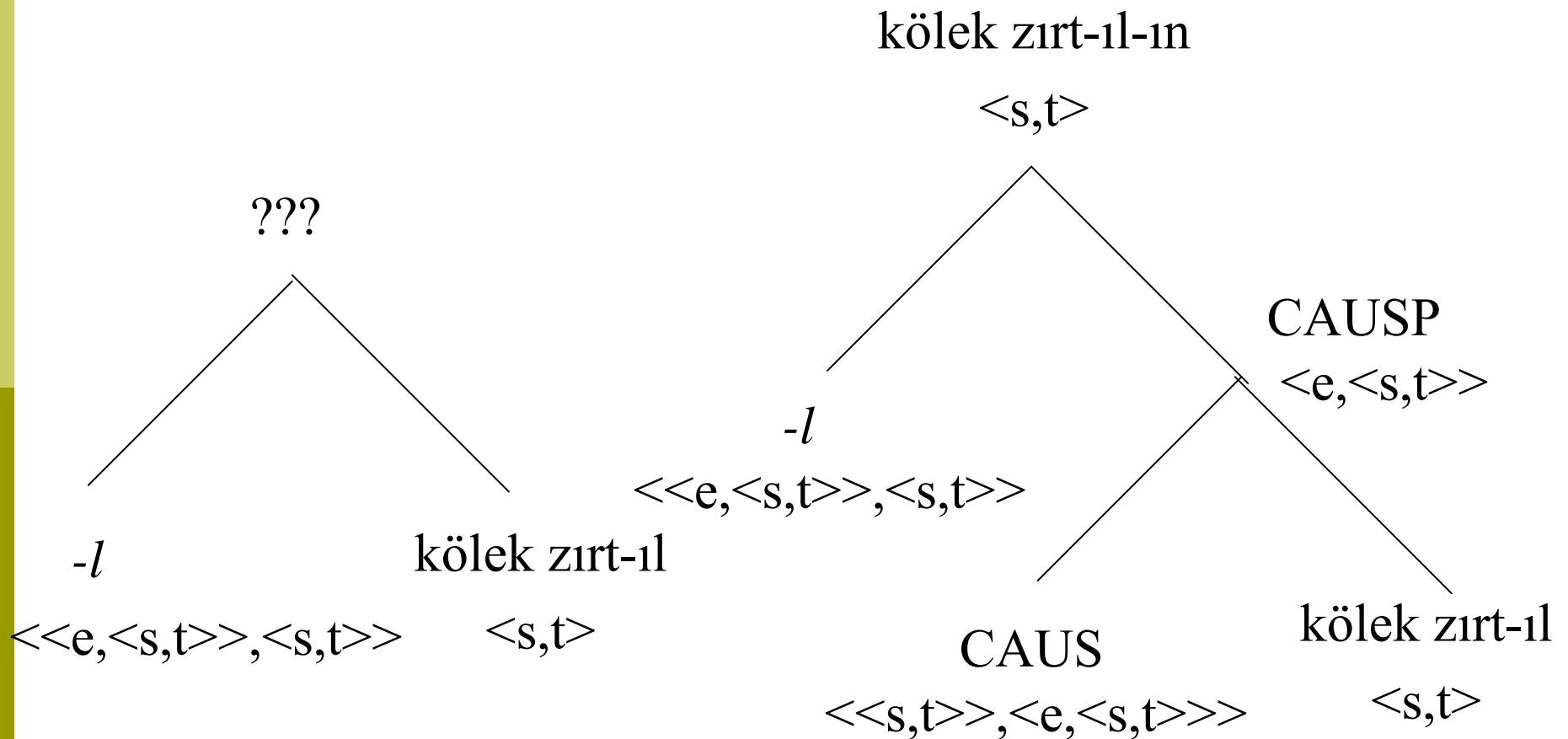
(39) kölek   (kerim-ni küc-ü ble)   zırt-ıl-ın-dı.

      shirt.nom K.-gen   force-3 with tear-pass-pass-pst.3sg

       'The shirt was torn by Kerim (on someone's order).'

Example derivations

Recursive passive

kölek zırt-ıl-ın
<s,t>

???

CAUSP
<e,<s,t>>

-l
<<e,<s,t>>,<s,t>>

-l
<<e,<s,t>>,<s,t>>

kölek zırt-ıl
<s,t>

kölek zırt-ıl
<s,t>

CAUS
<<s,t>>,<e,<s,t>>>

Example derivations

Recursive passive

(40) a. **Passive (=36d):**

$\|\text{-}l\text{- [kölek zırt] }\| = \lambda e \exists y \exists e'[\text{tear(shirt)}(e') \wedge \text{Agent}(y)(e) \wedge \text{cause}(e')(e)]$

b. **Coercion operator:**

$\| \text{CAUS}\| = \lambda P \lambda x \lambda e \exists e'[P(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$

c. **Coercion:**

$\| \text{CAUS (kölek zırt-ıl) }\| = \lambda P \lambda x \lambda e \exists e'[P(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)](\lambda e \exists y \exists e'[\text{tear(shirt)}(e') \wedge \text{Agent}(y)(e) \wedge \text{cause}(e')(e)]) = \lambda x \lambda e \exists y \exists e' \exists e'' [\text{tear(shirt)}(e'') \wedge \text{Agent}(y)(e') \wedge \text{cause}(e'')(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$

Example derivations

Recursive passive

(40) c. **Coercion:**

$\| \text{CAUS (kölek zırt-ıl)} \| = \lambda P \lambda x \lambda e \exists e'[P(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)](\lambda e \exists y \exists e'[\text{tear(shirt)}(e') \wedge \text{Agent}(y)(e) \wedge \text{cause}(e')(e)]) = \lambda x \lambda e \exists y \exists e' \exists e'' [\text{tear(shirt)}(e'') \wedge \text{Agent}(y)(e') \wedge \text{cause}(e'')(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$

   d. **Passive:**

$\| \textit{-l-} \| = \lambda R \lambda e \exists x[R(x)(e)]$

   e. **Passivization:**

$\|\textit{-l-} \text{ (CAUS (kölek zırt-ıl))} \| = \lambda e \exists x \exists y \exists e' \exists e'' [\text{tear(shirt)}(e'') \wedge \text{Agent}(y)(e') \wedge \text{cause}(e'')(e') \wedge \text{Agent}(x)(e) \wedge \text{cause}(e')(e)]$

Summary and conclusions

- The distribution of the passive morpheme in Karachay-Balkar suggests that causative coercion is empirically real.

- Causative coercion occurs whenever the verbal predicate fails to meet the type requirement associated with the passive morpheme, which is a function whose argument is of type $<e, <s,t>>$.

- Causative coercion is essentially a covert causativization whereby a causing subevent and its individual participant are introduced. Causativization maps event predicates of type $<s,t>$ to relations between events and individuals of type $<e,<s,t>>$

- Causative coercion repairs the type mismatch between the verbal predicate and the passive morpheme. It enables what superficially looks like a passivization of intransitive predicates and predicates that are passive already.

Thank you!

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