Zero morphology and change-of-state verbs

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Outline

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Claim

- Derivational ‘zero affixes’ do not exist
- ‘silent’ meaning components are pronounced cumulatively within overt morphemes ⇒ phrasal spellout
Introduction

Claim
- Derivational ‘zero affixes’ do not exist
- ‘silent’ meaning components are pronounced cumulatively within overt morphemes ⇒ phrasal spellout

Empirical domain
- Adjective-to-verb conversion
- Inchoative-causative alternation
Introduction

(1)  
   a. The road is **narrow**.
   b. The road **narrowed**.
Introduction

(1)  
  a. The road is narrow.
  b. The road narrowed.

(2)  
  a. A
      narrow
  b. V
      A
      narrow
      ∅
Introduction

(1)  
a. The road is **narrow**.
b. The road **narrowed**.

(2)  
a.  
```
A
|   
narrow
``` 
  
(3)  
```
V
|
A
|
V
```

```
V
|
A
|
V
```

narrow
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<table>
<thead>
<tr>
<th></th>
<th>-en</th>
<th>-ify</th>
<th>-ise</th>
</tr>
</thead>
<tbody>
<tr>
<td>∅</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cool</td>
<td>tighten</td>
<td>solidify</td>
<td>generalise</td>
</tr>
<tr>
<td>narrow</td>
<td>widen</td>
<td>prettify</td>
<td>formalise</td>
</tr>
<tr>
<td>open</td>
<td>shorten</td>
<td>simplify</td>
<td>americanise</td>
</tr>
<tr>
<td>thin</td>
<td>sharpen</td>
<td>humidify</td>
<td>sexualise</td>
</tr>
<tr>
<td>dim</td>
<td>slacken</td>
<td>acidify</td>
<td>christianise</td>
</tr>
<tr>
<td>tame</td>
<td>brighten</td>
<td>fluidify</td>
<td>commercialise</td>
</tr>
<tr>
<td>blind</td>
<td>cheapen</td>
<td>falsify</td>
<td>conceptualise</td>
</tr>
<tr>
<td>warm</td>
<td>coarsen</td>
<td>Frenchify</td>
<td>actualise</td>
</tr>
<tr>
<td>clean</td>
<td>dampen</td>
<td>intensify</td>
<td>annualise</td>
</tr>
<tr>
<td>empty</td>
<td>darken</td>
<td>uglify</td>
<td>grammaticalise</td>
</tr>
<tr>
<td>clear</td>
<td>deaden</td>
<td>diversify</td>
<td>brutalise</td>
</tr>
<tr>
<td>dry</td>
<td>deafen</td>
<td>mummify</td>
<td>centralise</td>
</tr>
<tr>
<td>quiet</td>
<td>lighten</td>
<td>fortify</td>
<td>criminalise</td>
</tr>
<tr>
<td>brown</td>
<td>fasten</td>
<td>modify</td>
<td>materialise</td>
</tr>
</tbody>
</table>
Data

(4)

INCHOATIVE                      CAUSATIVE
a. The road narrowed            The workers narrowed the road
b. Her stomach tightened        She tightened the lid
c. The mixture solidified       The company solidified its position
d. Forms and ideas materialise  They materialised their ideas
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The verb contains the adjective

- morphologically
- semantically
Morphology: English

(5) a.  

```
      V
     /\   
    A   V
   /   /   /
tight solid criminal
   / /     
-ens-ify-ise
```

b.  

```
      V
     /\   
    V   A
   /   /   /
 en-rich
   / /     
```
<table>
<thead>
<tr>
<th>A</th>
<th>( V_{INCH/CAUS} )</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>bleek</td>
<td>ver-bleek-en</td>
<td>‘pale’</td>
</tr>
<tr>
<td>warm</td>
<td>ver-warm-en</td>
<td>‘warm’</td>
</tr>
<tr>
<td>breed</td>
<td>ver-breed-en</td>
<td>‘widen’</td>
</tr>
<tr>
<td>smal</td>
<td>ver-small-en</td>
<td>‘narrow’</td>
</tr>
<tr>
<td>groot</td>
<td>ver-groot-en</td>
<td>‘enlarge’</td>
</tr>
<tr>
<td>klein</td>
<td>ver-klein-en</td>
<td>‘become/make smaller’</td>
</tr>
<tr>
<td>dik</td>
<td>ver-dikk-en</td>
<td>‘thicken’</td>
</tr>
<tr>
<td>dun</td>
<td>ver-dunn-en</td>
<td>‘thin’</td>
</tr>
<tr>
<td>arm</td>
<td>ver-arm-en</td>
<td>‘become/make poor’</td>
</tr>
</tbody>
</table>
Semantics

\[(7) \quad [v \text{ open}] = [(\text{cause to}) \text{ become}] [a \text{ open}]\]
The causative contains the inchoative

- morphologically
- semantically
Morphology

(8) Haspelmath (1993)

a. Georgian  duγ-s  ‘cook’  (INCH)
   a-duγ-ebs  ‘cook’  (CAUS)

b. French  fondre  ‘melt’  (INCH)
   faire  fondre  ‘melt’  (CAUS)

c. Arabic  darasa  ‘learn’  (INCH)
   darrasa  ‘teach’  (CAUS)
Semantics

(9) \([\text{V open}]_{\text{CAUS}} = \text{[cause to } \text{V open}]_{\text{INCH}}\)_{\text{CAUS}}
Decomposing V (Ramchand 2008)

(10)

\[
\text{INITP}
\]

\[
\begin{align*}
\text{INIT} & \quad \text{‘cause’} \\
\text{PROC} & \quad \text{‘become’} \\
\text{RES} & \quad \text{‘adjective’}
\end{align*}
\]
Putting A into V

(11) **Causative**

\[
\begin{array}{c}
\text{INITP} \\
\text{INIT} \quad \text{PROC} \\
\quad \text{AP} \\
\end{array}
\]
(11) **Causative**

```
  INITP
    INIT  PROC
        PROC  AP
            ...
```

(12) **Inchoative**

```
  PROC
    PROC  AP
        ...
```
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(13) Syntax of causative verb

```
  INITP
    INIT  PROC
      PROC  AP
```

...
Zero-marking is phrasal spellout

\[(14) \quad \text{Lexicon} \]

\[\text{INITP} \quad \leftrightarrow \quad \text{narrow} \]

\[\text{INIT} \quad \text{PROC}\]

\[\text{PROC} \quad \text{AP} \]

\[\ldots\]
Zero-marking is phrasal spellout

(15) **Phrasal Spellout**

```
  INITP
   INIT  PROC
      PROC  AP
          ...
```

*narrow*
(16)  

a. Inchoative verb

```
PROCP
  /
PROC   AP
```

b. Adjective

```
AP
```

...
(17) *Superset Principle* (Starke 2009)
A lexically stored tree L matches a syntactic node S iff L contains the syntactic tree dominated by S as a subtree
(18)  

(a) **Inchoative verb**

(b) **Adjective**

\[
\text{PROCP} \\
\text{PROC} \quad \text{AP} \\
\text{...} \\
\]

\[
\text{AP} \\
\text{...} \\
\text{narrow}
\]
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**Suffixal marking**

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(19)  
a. The workers narrowed/*wided the road.
b. The road narrowed/*wided.
Suffixal marking

(19)  a. The workers narrowed/*wided the road.
b. The road narrowed/*wided.

(20)  AP \iff wide

\[\triangle\]

...
Suffixal marking

(21) 

\[ \text{INITP} \]

\[ \text{INIT} \]

\[ \text{PROC} \]

\[ \text{-en} \]

\[ \text{PROC} \]

\[ \text{AP} \]

\[ \ldots \]

\[ \text{wide} \]
Suffixal marking

(22) $\text{INITP} \iff -en$

\[
\begin{array}{c}
\text{INITP} \\ \downarrow \\ \text{INIT} \quad \text{PROC} \\ \downarrow \\ \text{PROC}
\end{array}
\]
Suffixal marking

(23) 

\[
\begin{array}{c}
\text{INITP} \\
\text{INIT} & \text{PROC} \\
\text{-en} & \text{AP} \\
\end{array}
\]

wide
Suffixal marking

(24)

```
  AP
  /
 ×
```

`wide`

```
  INITP
  /
INIT    PROC
 |
PROC
```

`en`
Suffixal marking

(25) PROCP
    /
   /  
PROC  AP
    ▲   ...
    wide

(26) AP
    ▲   ...
    wide
  /  
PROCP  PROC
   |   en
Possible scenarios

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>PROC</th>
<th>INIT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>root</td>
<td>suffix</td>
<td></td>
<td>Eng. <em>wid-en</em></td>
</tr>
<tr>
<td>2.</td>
<td>root</td>
<td>suffix1</td>
<td>suffix2</td>
<td>?</td>
</tr>
<tr>
<td>3.</td>
<td>root</td>
<td>suffix</td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>4.</td>
<td>root</td>
<td></td>
<td></td>
<td>Eng. <em>narrow</em></td>
</tr>
</tbody>
</table>
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(28) causative -i
Causatives in Czech

(28) causative -i

a. tup-ý
   blunt-AGR
Causatives in Czech

(28) causative -i
a. tup-ý
   blunt-AGR
b. tup-i -l
   blunt-CAUSE -PAST
Causatives in Czech

(28) causative -i
   a. tup-ý
      blunt-AGR
   b. tup-i
      blunt-CAUSE -PAST

(29) palatalization
   a. tich-ý
      silent-AGR
   b. tiš-i
      silent-CAUSE -PAST

(30) prefixation
   a. snadn-ý
      easy-AGR
   b.* snadn-i
      easy-CAUSE -PAST
   c. u-UP snadn-i
      easy-CAUSE -PAST

(31) allomorphy
   a. tup-i
      blunt-CAUSE -PAST
   b. tup-í
      blunt-CAUSE -1.SG
   c. tup-e
      blunt-CAUSE -NOM
Causatives in Czech

(28) causative -i
a. tup-ý
   blunt-AGR
b. tup-i -l
   blunt-CAUSE -PAST

(29) palatalization
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   silent-AGR
b. *snadn-í
   easy-CAUSE -PAST
c. u-í
   *snadn-í
   easy-CAUSE -PAST

(30) prefixation
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   silent-AGR
b. *snadn-í
   easy-CAUSE -PAST
c. u-í
   *snadn-í
   easy-CAUSE -PAST

(31) allomorphy
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   blunt-CAUSE -PAST
b. tup-í
   blunt-CAUSE -PAST
   1.SG
   1.SG
   PAST
   PAST
   NOM
   NOM
   PAST
   PAST
   PAST
   PAST
Causatives in Czech

(28) causative -i
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      blunt-AGR
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Causatives in Czech

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   b. tup-i -l
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Causatives in Czech

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Causatives in Czech

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   b. tiš-i -l
      silent-CAUSE -PAST

(30) prefixation
   a. snadn-ý
      easy-AGR
   b. *snadn-i -l
      easy-CAUSE -PAST
   c. u- snadn-i -l
      UP easy-CAUSE -PAST
Causatives in Czech

(28) causative -i
    a. tup-ý
       blunt-AGR
    b. tup-i -l
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(29) palatalization
    a. tich-ý
       silent-AGR
    b. tiš-i -l
       silent-CAUSE -PAST

(30) prefixation
    a. snadn-ý
       easy-AGR
    b. *snadn-i -l
       easy-CAUSE -PAST
    c. u- snadn-i -l
       UP easy-CAUSE -PAST

(31) allomorphy
Causatives in Czech

(28) causative -i
   a. tup-ý  blunt-AGR
   b. tup-i  -l  blunt-CAUSE -PAST

(29) palatalization
   a. tich-ý  silent-AGR
   b. tiš-i  -l  silent-CAUSE -PAST

(30) prefixation
   a. snadn-ý  easy-AGR
   b. *snadn-i  -l  easy-CAUSE -PAST
   c. u-  snadn-i  -l  UP easy-CAUSE -PAST

(31) allomorphy
   a. tup-i  -l  blunt-CAUSE -PAST
Causatives in Czech

(28) causative -i
a. tup-ý
   blunt-AGR
b. tup-i   -l
   blunt-CAUSE -PAST

(29) palatalization
a. tich-ý
   silent-AGR
b. tiš-i   -l
   silent-CAUSE -PAST

(30) prefixation
a. snadn-ý
   easy-AGR
b. *snadn-i   -l
   easy-CAUSE -PAST
c. u- snadn-i   -l
   UP easy-CAUSE -PAST

(31) allomorphy
a. tup-i   -l
   blunt-CAUSE -PAST
b. tup-í   -m
   blunt-CAUSE -1.SG
Causatives in Czech

(28) causative -i
a. tup-ý
   blunt-AGR
b. tup-i -l
   blunt-CAUSE -PAST

(29) palatalization
a. tich-ý
   silent-AGR
b. tiš-i -l
   silent-CAUSE -PAST

(30) prefixation
a. snadn-ý
   easy-AGR
b. *snadn-i -l
   easy-CAUSE -PAST

(31) allomorphy
a. tup-i -l
   blunt-CAUSE -PAST
b. tup-í -m
   blunt-CAUSE -1.SG

   c. tup-e -ní
      blunt-CAUSE -NOM
Table 1: A sample of causatives derived from adjectives beginning with *p*

<table>
<thead>
<tr>
<th>gloss</th>
<th>adjective</th>
<th>causatives with various prefixes</th>
</tr>
</thead>
<tbody>
<tr>
<td>coulourful</td>
<td>pestr-ý</td>
<td>z-pestř-i-t</td>
</tr>
<tr>
<td>firm</td>
<td>pevn-ý</td>
<td>při-pevn-i-t, z-pevn-i-t, u-pevn-i-t</td>
</tr>
<tr>
<td>shy</td>
<td>plach-ý</td>
<td>po-plaš-i-t, vy-plaš-i-t</td>
</tr>
<tr>
<td>full</td>
<td>pln-ý</td>
<td>do-pln-i-t, na-pln-i-t, pře-pln-i-t, vy-pln-i-t</td>
</tr>
<tr>
<td>flat</td>
<td>plosk-ý</td>
<td>z-plošt-i-t</td>
</tr>
<tr>
<td>similar</td>
<td>podobn-ý</td>
<td>z-podobn-i-t, při-podobn-i-t, vy-podobn-i-t</td>
</tr>
<tr>
<td>substantial</td>
<td>podstatn-ý</td>
<td>o-podstatn-i-t</td>
</tr>
<tr>
<td>doubtful</td>
<td>pochybn-ý</td>
<td>z-pochybn-i-t</td>
</tr>
<tr>
<td>slow</td>
<td>pomal-ý</td>
<td>z-pomal-i-t</td>
</tr>
<tr>
<td>late</td>
<td>pozd-n-í</td>
<td>z-pozd-i-t, o-pozd-i-t, pozd-i-t, při-pozd-i-t</td>
</tr>
<tr>
<td>alert</td>
<td>pozorn-ý</td>
<td>u-pozorn-i-t</td>
</tr>
<tr>
<td>empty</td>
<td>prázdn-ý</td>
<td>u-prázdn-i-t, vy-prázdn-i-t</td>
</tr>
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<td>flexible</td>
<td>pružn-ý</td>
<td>z-pružn-i-t</td>
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<td>passable</td>
<td>průchodn-ý</td>
<td>z-průchodn-i-t</td>
</tr>
<tr>
<td>transparent</td>
<td>průhledn-ý</td>
<td>z-průhledn-i-t</td>
</tr>
<tr>
<td>passable</td>
<td>průjezdn-ý</td>
<td>z-průjezdn-i-t</td>
</tr>
<tr>
<td>preferential</td>
<td>přednostn-í</td>
<td>u-přednostn-i-t</td>
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<tr>
<td>synoptic</td>
<td>přehledn-ý</td>
<td>z-přehledn-i-t</td>
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<tr>
<td>exact</td>
<td>přesn-ý</td>
<td>z-přesn-i-t, u-přesn-i-t</td>
</tr>
<tr>
<td>pleasant</td>
<td>příjemn-ý</td>
<td>z-příjemn-i-t</td>
</tr>
<tr>
<td>straight</td>
<td>přím-ý</td>
<td>na-přím-i-t, vz-přím-i-t</td>
</tr>
<tr>
<td>strict</td>
<td>přísn-ý</td>
<td>z-přísn-i-t</td>
</tr>
<tr>
<td>accessible</td>
<td>přístupn-ý</td>
<td>z-přístupn-i-t</td>
</tr>
<tr>
<td>present</td>
<td>přítomn-ý</td>
<td>z-přítomn-i-t</td>
</tr>
</tbody>
</table>
Three INCH/CAUS scenarios in Czech

- We now focus on inchoative counterparts
Three INCH/CAUS scenarios in Czech

- We now focus on inchoative counterparts
  - not uniform
Three INCH/CAUS scenarios in Czech

- We now focus on inchoative counterparts
  - not uniform
  - we introduce three different classes
Three INCH/CAUS scenarios in Czech

- We now focus on inchoative counterparts
  - not uniform
  - we introduce three different classes
- We focus mainly on the past participle
Three INCH/CAUS scenarios in Czech

- We now focus on inchoative counterparts
  - not uniform
  - we introduce three different classes
- We focus mainly on the past participle
- All wordlists and example sentences from the Czech National Corpus (https://www.korpus.cz)
Czech Class I ɨ/ɨ

- CAUS and INCH are both marked by the -ɨ- suffix (cf. English wid-en)
Czech Class I $i/i$

- CAUS and INCH are both marked by the -$i-$ suffix (cf. English \textit{wid-en})

(32) \textit{levn-ý}
cheap-AGR

\begin{itemize}
  \item \textit{levn-ý}
  \end{itemize}
Czech Class I i/i

- CAUS and INCH are both marked by the -i- suffix (cf. English wid-en)

(32) **levn-ý**
cheap-AGR

(33) Škoda Auto z- **levn** -i -la své dva hlavní modely Škoda auto PREF- cheap -CAUS -PST its two main models ‘The Škoda Auto company has made its two main models cheaper.’
CAUS and INCH are both marked by the -i- suffix (cf. English wid-en)

(32)  levn-ý
cheap-AGR

(33) Škoda Auto z- levn -i -la své dva hlavní modely
Škoda auto PREF- cheap -CAUS -PST its two main models
‘The Škoda Auto company has made its two main models cheaper.’

(34) Vodka z- levn -i -la
vodka PREF- cheap -INCH -PST
‘Vodka got cheaper.’
Czech Class I i/i

- CAUS and INCH are both marked by the -i- suffix (cf. English *wid-en*)

(32)  *levn-*ý
cheap-AGR

(33)  Škoda Auto *levn* -i -la své dva hlavní modely
Škoda auto PREF- cheap -CAUS -PST its two main models
‘The Škoda Auto company has made its two main models cheaper.’

(34)  Vodka *levn* -i -la
vodka PREF- cheap -INCH -PST
‘Vodka got cheaper.’

(35)  | A | PROC | INIT |
     |    |      |      |
     | root | -i- |
     |      | -i- |
Table 2: Causative-inchoative ambiguity (Czech National Corpus)

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<tbody>
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Three INCH/CAUS scenarios in Czech

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<td>Cz. Class I</td>
</tr>
<tr>
<td>2</td>
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<td>?</td>
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<tr>
<td>3</td>
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<tr>
<td>4</td>
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<td>Eng. <em>narrow</em></td>
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</table>
Czech Class II: i/ě

- Some verbs have a dedicated inchoative marker -ě
Czech Class II: \( i/ě \)

- Some verbs have a dedicated inchoative marker -ě

(37) \textit{nervózn-í}  
nervous-AGR
Czech Class II: i/ě

- Some verbs have a dedicated inchoative marker -ě

(37) nervózn-í
nervous-AGR

(38) Tento moment z- nervózn -i -l domácí hráče
this moment PREF- nervous -CAUS -PST home players
‘This moment made the home players nervous.’
Czech Class II: i/ě

- Some verbs have a dedicated inchoative marker -ě

(37)  *nervózn-í*
nervous-AGR

(38)  Tento moment z- *nervózn -i* -l domácí hráče
this moment PREF- nervous -CAUS -PST home players
‘This moment made the home players nervous.’

(39)  Táta z- *nervózn -ě* -l
father PREF- nervous -BECOME -PST
‘My father got nervous.’
Czech Class II: i/ě

- Some verbs have a dedicated inchoative marker -ě

(37) nervózn-í
    nervous-AGR

(38) Tento moment z- nervózn -i -l domácí hráče
    this moment PREF- nervous -CAUS -PST home players
    ‘This moment made the home players nervous.’

(39) Táta z- nervózn -ě -l
    father PREF- nervous -BECOME -PST
    ‘My father got nervous.’

(40) A | PROC | INIT
    root | -i- | -ě-
    -ě-
Table 3: A list of *i/ě* pairs

<table>
<thead>
<tr>
<th>inchoative</th>
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<th>causative</th>
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Three INCH/CAUS scenarios in Czech

<table>
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<tr>
<td>1.</td>
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<td>2.</td>
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<td>Eng. <em>narrow</em></td>
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Czech Class III: $i/\emptyset$

- Some verbs seem to have a zero inchoative
Some verbs seem to have a zero inchoative

(42)  *slep-*ý
blind-AGR
Czech Class III: $i/∅$

- Some verbs seem to have a zero inchoative

(42) $\text{slep-ý}$
    blind-AGR

(43) Plyn Botonese $o-\text{slep} -i -l$
    gas.NOM Botonese.ACC PREF blind -CAUSE PST
    ‘The gas made Botonese blind.’
Czech Class III: \( i/\emptyset \)

- Some verbs seem to have a zero inchoative

(42) \( slep-\ddot{y} \)
blind-AGR

(43) Plyn Botonese \( o- slep -i -l \)
gas.NOM Botonese.ACC PREF blind -CAUSE PST
‘The gas made Botonese blind.’

(44) Otec [...] téměř \( o- slep -\emptyset -l. \)
father ... almost PREF blind -BECOME PST
‘My father became almost blind.’
Czech Class III: \textit{i/∅}

\[
\begin{array}{ccc}
(45) & A & \text{PROC} & \text{INIT} \\
     & \text{root} & -i- \\
     & \text{root} & \text{root} \\
\end{array}
\]
Czech Class III: \( i/\emptyset \)

(45)  

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<td>-i-</td>
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Table 4: A list of $i/\emptyset$ pairs

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<th>adjective</th>
<th>causative</th>
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<td>o-bohat-i-l</td>
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<td>o-hluš-i-l</td>
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<td>o-chud-i-l</td>
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<td>vy-tvrd-i-l</td>
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### Three INCH/CAUS scenarios in Czech

(46)

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<td>Eng. <em>wid-en</em></td>
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<td>Cz. Class I</td>
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<td>2.</td>
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<td>Cz. Class II</td>
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<td>suffix2</td>
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Introduction

Data

Prerequisites

Zero-marking is phrasal spellout

Suffixal marking

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Conclusions

Appendix
Conclusions

- Two analytical claims
Conclusions

- Two analytical claims
  - Conversion arises as an effect of phrasal spellout (derivational ‘zero affixes’ do not exist)
Conclusions

▶ Two analytical claims
  i Conversion arises as an effect of phrasal spellout (derivational ‘zero affixes’ do not exist)
  ii Causatives contain inchoatives
Conclusions

- Two analytical claims
  1. Conversion arises as an effect of phrasal spellout (derivational ‘zero affixes’ do not exist)
  2. Causatives contain inchoatives
  3. Inchoatives contain adjectives
Conclusions

▶ Two analytical claims
  i  Conversion arises as an effect of phrasal spellout (derivational ‘zero affixes’ do not exist)
  ii  Causatives contain inchoatives
  iii  Inchoatives contain adjectives
▶ The empirical part
Conclusions

- Two analytical claims
  - i. Conversion arises as an effect of phrasal spellout (derivational 'zero affixes' do not exist)
  - ii. Causatives contain inchoatives
  - iii. Inchoatives contain adjectives

- The empirical part
  - i. Works well for deadjectival inchoative/causative verbs in English
Conclusions

- Two analytical claims
  - Conversion arises as an effect of phrasal spellout (derivational ‘zero affixes’ do not exist)
  - Causatives contain inchoatives
  - Inchoatives contain adjectives

- The empirical part
  - Works well for deadjectival inchoative/causative verbs in English
  - Allows us to capture the inchoative/causative alternation in Czech
Thank you!
References


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Appendix
Appendix

1. Does the causative always contain the inchoative?
2. Czech -nu
3. Czech Present Tense
Does the causative always contain the inchoative?

(47)  a. L’enfant a ouvert la porte.  
     the child has opened the door  
     ‘The child opened the door.’

  b. La porte s’est ouverte.  
     the door REFL is opened  
     ‘The door opened.’
Does the causative always contain the inchoative?

(47) a. L’enfant a ouvert la porte.
   the child has opened the door
   ‘The child opened the door.’

b. La porte s’est ouverte.
   the door REFL is opened’
   ‘The door opened.’

- no dedicated (i.e. nonreflexive) derivational affix that does this
  (see e.g. Koontz-Garboden 2009: 80)

- $V_{\text{ANTICAUS}} = \text{CAUSE} (x, \text{BECOME}(\text{Pred}(y))),$ with $x = y$
Does the causative always contain the inchoative?

\[(48) \quad \text{Causational Entailment (Lundquist et al. 2016: 2)}
\forall x \forall y [\text{CAUSE}(x, \text{BECOME}(\text{Pred}(y))) \rightarrow \text{BECOME}(\text{Pred}(y))]]
Does the causative always contain the inchoative?

(48) Causational Entailment (Lundquist et al. 2016: 2)
∀x∀y[CAUSE (x, BECOME(Pred(y))) → BECOME(Pred(y))]

(49) #John broke the glass, but the glass didn’t break.
Does the causative always contain the inchoative?

(50) No Causational Entailment with Anticausatives
\[ \forall x \forall y [\text{CAUSE } (x, \text{BECOME} (\text{Pred}(y))) \nleftrightarrow \text{CAUSE } (y, \text{BECOME} (\text{Pred}(y))))] \]
Does the causative always contain the inchoative?

(50) No Causational Entailment with Anticausatives
\[ \forall x \forall y [\text{CAUSE} (x, \text{BECOME}(\text{Pred}(y))) \iff \text{CAUSE} (y, \text{BECOME}(\text{Pred}(y)))] \]

(51) Koontz-Garboden (2009: 117)
a. #No empeoró ningún paciente. Los empeoró el tratamiento.
   ‘No patient worsened. The treatment worsened them.’
b. No se rompió ningún vaso; los rompió Andrés.
   ‘No glass broke; Andrew broke them.’
Does the causative always contain the inchoative?

Lundquist, Corley, Tungseth, Sorace & Ramchand (2016)

- experiment with English and Norwegian speakers
- E has no anticausatives
- N has both inchoatives and anticausatives
- N speakers are much more reluctant to accept the *Causational Entailment*, particularly with reflexive-marked causatives
Does the causative always contain the inchoative?

**Figure 1**: Percentage yes-responses for “unmarked” and “marked” anticausative verbs, by focus on theme or agent in the videos, for English and Norwegian respondents. Error bars represent two standard errors.
In the infinitive of Class III verbs, we find *nou* in the inchoative:

(52) Sníh tě může o- *slep* -i -t
snow you-ACC can PREF blind -CAUS INF
‘The snow can make you blind.’

(53) Koza může dokonce o- *slep* -*nou* -t
goat can even PREF blind -BECOME INF
‘The goat can even turn blind.’
In the infinitive of Class III verbs, we find *nou* in the inchoative:

(52) Sníh tě může o- **slep** -i -t
snow you-ACC can PREF blind -CAUS INF
‘The snow can make you blind.’

(53) Koza může dokonce o- **slep** -**nou** -t
goat can even PREF blind -BECOME INF
‘The goat can even turn blind.’

(54) | A | PROC | INIT |
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<td>-nou-</td>
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Czech -nu

- -nu- is optional in the past tense

(55) Plyn Botonese o- slep -i -l
gas.NOM Botonese.ACC PREF blind -CAUSE PST
‘The gas made Botonese blind.’
Czech -nu

- -nu- is optional in the past tense

(55) Plyn Botonese o- slep -i -l
    gas.NOM Botonese.ACC PREF blind -CAUSE PST
    ‘The gas made Botonese blind.’

(56) Otec [...] téměř o- slep -Ø -l.
    father ... almost PREF blind -BECOME PST
    ‘My father became almost blind.’
Czech -nu

- *-nu-* is optional in the past tense

(55) Plyn Botonese o- slep -i -l
    gas.NOM Botonese.ACC PREF blind -CAUSE PST
    ‘The gas made Botonese blind.’

(56) Otec [...] téměř o- slep -Ø -l.
    father ... almost PREF blind -BECOME PST
    ‘My father became almost blind.’

(57) Táta skoro o- slep -nu -l
    dad almost PREF blind -BECOME PST
    ‘My dad became almost blind.’

According to *Mluvnice Češtiny II* [The Grammar of Czech II], this is an ongoing change motivated by ‘paradigm leveling’.
Czech -nu

- -nu- is optional in the past tense

(55) Plyn Botonese o- slep -i -l
    gas.NOM Botonese.ACC PREF blind -CAUSE PST
    ‘The gas made Botonese blind.’

(56) Otec [...] téměř o- slep -Ø -l.
    father ... almost PREF blind -BECOME PST
    ‘My father became almost blind.’

(57) Táta skoro o- slep -nu -l
    dad almost PREF blind -BECOME PST
    ‘My dad became almost blind.’

- According to Mluvnice Češtiny II [The Grammar of Czech II], this
  is an ongoing change motivated by ‘paradigm leveling’
Czech -\textit{nu} 

(58) Old system

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<tbody>
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\[\text{root} \rightarrow \text{root}\]
**Czech -nu**

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<th>(58) Old system</th>
<th>(59) New system</th>
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<tr>
<td><strong>A</strong></td>
<td><strong>PROC</strong></td>
</tr>
<tr>
<td>root</td>
<td>-i-</td>
</tr>
<tr>
<td>root</td>
<td>-i-</td>
</tr>
</tbody>
</table>
Czech -\textit{nu}

(58) Old system

\begin{center}
\begin{tabular}{c|c|c}
A & PROC & INIT \\
\hline
root & -i- & \\
\hline
root & & \\
\end{tabular}
\end{center}

(59) New system

\begin{center}
\begin{tabular}{c|c|c}
A & PROC & INIT \\
\hline
root & -i- & \\
\hline
root & -nu- & \\
\end{tabular}
\end{center}

Problem 1: -\textit{nu}- is sometimes impossible in the inchoative reading
### Czech -nu

<table>
<thead>
<tr>
<th>Old system</th>
<th>New system</th>
</tr>
</thead>
<tbody>
<tr>
<td>(58)</td>
<td>(59)</td>
</tr>
</tbody>
</table>
| \[
\begin{array}{c|c|c}
   A & PROC & INIT \\
   \hline
   \text{root} & -i- & \\
   \text{root} & -nu- & \\
\end{array}
\] | \[
\begin{array}{c|c|c}
   A & PROC & INIT \\
   \hline
   \text{root} & -i- & \\
   \text{root} & -nu- & \\
\end{array}
\] |

- **Problem 1:** -nu- is sometimes impossible in the inchoative reading

(60) \[... \text{že není úplně o-} \text{ slep} \text{ (*-nu)} \text{ -l -ý} \]

... that he.is.not completely PREF blind -BECOME PST AGR

‘... that he has not turned completely blind.’
Problem 2: the roots may have different shapes
Czech -nu

- Problem 2: the roots may have different shapes

<table>
<thead>
<tr>
<th>inchoative</th>
<th>gloss</th>
<th>adjective</th>
<th>causative</th>
</tr>
</thead>
<tbody>
<tr>
<td>z-houst-nou-t</td>
<td>dense</td>
<td>hust-ý</td>
<td>za-hust-i-t</td>
</tr>
<tr>
<td>sch-nou-t</td>
<td>dry</td>
<td>such-ý</td>
<td>suš-i-t</td>
</tr>
<tr>
<td>o-mlád-nou-t</td>
<td>young</td>
<td>mlad-ý</td>
<td>o-mlad-i-t</td>
</tr>
<tr>
<td>ze-sláb-nou-t</td>
<td>weak</td>
<td>slab-ý</td>
<td>o-slab-i-t</td>
</tr>
<tr>
<td>zlát-nou-t</td>
<td>golden</td>
<td>zlat-ý</td>
<td>po-zlat-i-t</td>
</tr>
<tr>
<td>žlout-nou-t</td>
<td>yellow</td>
<td>žlut-ý</td>
<td>za-žlut-i-t</td>
</tr>
<tr>
<td>slád-nou-t</td>
<td>sweet</td>
<td>slad-k-ý</td>
<td>slad-i-t</td>
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<tr>
<td>z-křeh-nou-t</td>
<td>fragile</td>
<td>křeh-k-ý</td>
<td>z-křeh-č-i-t</td>
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<tr>
<td>měk-nou-t</td>
<td>soft</td>
<td>měk-k-ý</td>
<td>měk-č-i-t</td>
</tr>
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<td>vlh-nou-t</td>
<td>wet</td>
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<td>vlh-č-i-t</td>
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</tbody>
</table>
New system

A

PROC

INIT

- i -

-root

-nu-
Czech -nu

(61) New system

<table>
<thead>
<tr>
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(62) Je to vy- sch -Ø -l -ý vodopád

is this PREF dry -BECOME PST AGR waterfall

‘This is a dried-up waterfall.’
Czech -nu

(61) New system

\[
\begin{array}{c|c|c}
A & \text{PROC} & \text{INIT} \\
\hline
\text{root} & -i- & -nu- \\
\end{array}
\]

(62) Je to \textbf{vy- sch -Ø -l -ý vodopád}

is this \textit{PREF} dry \textit{-BECOME} PST AGR waterfall

‘This is a dried-up waterfall.’

(63) \[\begin{array}{c|c|c}
A & \text{PROC} & \text{INIT} \\
\hline
\text{such} & -i- & \text{‘dry’} \\
\text{sch} & & \\
\end{array}\]
Czech -nu

(64) Old system

<table>
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Czech -\textit{nu}

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Czech -nu

- Independent evidence that -nu- is an aspect marker comes from progressive aspect marker -(ov)a (secondary imperfective).
Czech -nu

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(66) If a language were strictly agglutinative ...
Czech -nu

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(66) If a language were strictly agglutinative ...

a. A
Czech \(-nu\)

- Independent evidence that \(-nu\)- is an aspect marker comes from progressive aspect marker \(-\text{(ov)}a\) (secondary imperfective).

(66) If a language were strictly agglutinative ...

a. \(A\)
b. \(A-V_{\text{INCH}}\)
Czech -nu

- Independent evidence that -nu- is an aspect marker comes from progressive aspect marker -(ov)a (secondary imperfective).

(66) If a language were strictly agglutinative ...

a. A
b. A-V_{INCH}
c. A-V_{INCH}-PROG

(67) This is not what we get for -nu-

a. tich-ý silent
b. u-tich-nou to become silent
c. *u-tich-nou-a to be becoming silent
d. u-tich-a to be becoming silent
Czech -nu

- Independent evidence that -nu- is an aspect marker comes from progressive aspect marker -(ov)a (secondary imperfective).

(66) If a language were strictly agglutinative ...
   a. A
   b. A-V_{INCH}
   c. A-V_{INCH}-PROG

(67) This is not what we get for -nu-
   a. tich-ý silent
   b. u-tich-nou-t to become silent
   c. *u-tich-nou-a-t to be becoming silent
   d. u-tich-a-t to be becoming silent
causative -i- behaves differently and is not eliminated by the progressive aspect marker
Czech -nu

- causative -i- behaves differently and is not eliminated by the progressive aspect marker

(68) a. tich-ý silent
Czech -nu

- causative -i- behaves differently and is not eliminated by the progressive aspect marker

(68) a. tich-ý silent
    b. u-tiš-i-t to make silent
Czech -nu

- causative -i- behaves differently and is not eliminated by the progressive aspect marker

(68)  a. tich-ý silent
     b. u-tiš-i-t to make silent
     c. u-tiš-ova-t to be making silent
Czech -nu

- causative -i- behaves differently and is not eliminated by the progressive aspect marker

(68)  
  a. tich-ý silent  
  b. u-tiš-i-t to make silent  
  c. u-tiš-ova-t to be making silent

(69)  
  a. dech breath  
  b. vy-dech-nou-t to breathe out  
  c. vy-dech-ova-t to be breathing out  
  *vy-deš-ova-t to be breathing out
Czech -nu

- causative -i- behaves differently and is not eliminated by the progressive aspect marker

(68)  a.  tich-ý  silent
    b.  u-tiš-i-t  to make silent
    c.  u-tiš-i-ova-t  to be making silent

(69)  a.  dech  breath
    b.  vy-dech-nou-t  to breathe out
    c.  vy-dech-ova-t  to be breathing out
    *vy-deš-ova-t  to be breathing out
Czech -nu

- progressive -(ov)a- stacks onto causative -i-
- progressive -(ov)a- does not stack onto -nu-
- this suggests that -nu- is an aspect marker like -(ov)a-, not an inchoative marker
Czech Present Tense

Class II verb (i/ě)

(70) Almin netečný tón Claudine z- nervózn
Alma’s indifferent voice Claudine.ACC PREF- nervous
-í
-CAUS+PRS
‘Alma’s indifferent voice makes Claudine nervous.’
Czech Present Tense

Class II verb (i/ě)

(70) Almin netečný tón Claudine z- nervózn
Alma’s indifferent voice Claudine.ACC PREF- nervous
-í
-CAUS+PRS
‘Alma’s indifferent voice makes Claudine nervous.’

(71) Lidé z- nervózn -í, když s nimi
people PREF- nervous -INCH+PRES if with then
nechcete pít.
not.want.you drink
‘People get nervous if you don’t want to drink with them.’
Czech Present Tense

- Each tense represents a system of causative/inchoative marking on its own.

(72) One possibility

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(73) Another possibility

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