C-command dependencies as TSL string constraints

Thomas Graf and Nazila Shafiei
Stony Brook University

1 Introduction

- The syntactic requirements for NPI, locally bound and non-locally bound anaphors are as follows:

Example 2: C-strings for NPI and Reflexives:

<table>
<thead>
<tr>
<th></th>
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<th>Non-locally Bound Anaphor</th>
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</thead>
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<td>NPI</td>
<td>(no, nobody)</td>
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</tr>
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<td></td>
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</tr>
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The well-formed c-strings for each constraint form a regular string language.

Example 3: Generalized Well-formed C-strings for NPIs and Reflexives

- **NPI**
  1. Nobody saw anybody. → cs(NPI)= anybody nobody see T C
  2. *Anybody saw nobody. → cs(NPI)= anybody see T C

- **Locally Bound Reflexives**
  1. John shaved himself. → cs(NPI)= himself shave T C
  2. John said that himself shaved Bill. → himself shave T that T say T C

- **Non-locally Bound Reflexives**
  1. *John shaved sig. → cs(NPI)= sig shave T C
  2. John said that Bill shaved sig. → cs(NPI)= sig Bill shave T that T say T C

The well-formed c-strings for each constraint form a regular string language.

2 C-command Relations as Strings

- Tree dependencies converted to string dependencies via c-command-strings
- Intuition: c-string of X lists c-commanders of X
- Formally: computed over dependency trees
  - immediate c-string of X (c(x)): X and all left siblings of X
  - c-string of X (c[X]): ic(x) + ic(mother of X)

Example 4: C-string of car over dependency tree

Example 5: Sarnatia Subjunct Harmony in TSL2

Example 6: Tier-Projections for NPI and Reflexives

- **NPI**
  1. Project the first symbol.
  2. Project an NPI-licensor if the previous tier-symbol is an NPI.

- **Reflexive**
  1. Project the first symbol.
  2. Project T or D⊆ if the previous tier-symbol is R[φ].

3 Subregular Complexity

- C-string constraints are also subregular.
- NPI constraints: input-output tier-based strictly local (IO-TSL).
- IO-TSL: ISL-like, well-formedness of string depends only on its substrings of length n.
- TSL-φ: project a tier that is SL-like.

Example 4: German Final Devoicing is SL-

Forbidden Bigrains: (z, ù, ò) (ù = word edges).

Example 5: Sarnatia Subjunct Harmony in TSL2

- No string may contain substrings that differ in anteriority.
- Project tier of sibilants.
- Forbidden Bigrains: all y such that x and y differ in anteriority.

The more information the tier projection may use, the more powerful the TSL-variant.

Example 3: Generalized Well-formed C-strings for NPIs and Reflexives

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4 Conclusion

- C-command dependencies are subregular string constraints over c-strings.
- The string constraints fall within the class IO-TSL.
- The complexity of many syntactic phenomena thus is comparable to dependencies in phonology and morphology.

References


Contact Information:
Department of Linguistics
Stony Brook University
Stony Brook, NY 11794-4376

Email:
mail@thomasgraf.net
nazila.shafiei@stonybrook.edu

Stony Brook University