

# Controlling the Language of Statutes and Regulations for Semantic Processing

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# Problem

**Natural language ambiguity** continues to be a major obstacle to a deep semantic processing of statutes and regulations:

- lexical ambiguity
- syntactic ambiguity
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## Side notes

- ① As opposed to vagueness (open-texturedness), ambiguity is never intended in a legal text – but it sometimes appears unavoidable.
- ② Not each instance of ambiguity that is a problem for semantic processing also poses a problem for human readers.

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- **Purposes**
  - ① **Human-oriented CNLs**  
improve the understandability and translatability e.g. of technical texts.
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ensure the processability of natural language specifications;  
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- **Applications**
  - ① technical documentation (manuals)
  - ② knowledge representation (business rules, clinical guidelines, Semantic Web)



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## Controlled Legal German (CLG)

a linguistic **standard** for Swiss statutes and regulations

- comprised of a set of **well-defined conventions**
- that **reduce ambiguity** in legal language
- and thus **facilitate semantic processing**.

# Legislative language is already partially controlled



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- **Drafting guidelines** for professional legal editors:  
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## Research question

Can we **adapt and expand existing conventions** in order to facilitate the semantic processing of statutes and regulations?

# Table of contents

- 1 Domain characteristics
- 2 Drafting guidelines
- 3 Additional standards
- 4 State of development
- 5 Conclusion



# Lexical conventions

## Art. 27 Abs. 2 BGG<sup>1</sup>

Die Veröffentlichung der Entscheide hat **grundsätzlich** in anonymisierter Form zu erfolgen.

'**In principle**, the decisions have to be published in anonymised form.'

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## Convention

In statutes and regulations, *grundsätzlich* is always used in the latter sense.

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# Indefinite plural noun phrases in subject position

§ 3 Abs. 3 UniO UZH<sup>2</sup>

**Dienstleistungen** sind [...] kostendeckend in Rechnung zu stellen.

'**Services** have to be charged so that the costs are covered.'

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In statutes and regulations, indefinite plural noun phrases in subject position are used in the generic sense.

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# De-dicto vs. de-re modality

## § 2 Abs. 4 UniO UZH

**Besondere Veranstaltungen** können auch für eine breite Öffentlichkeit angeboten werden.

'**Specific events** can also be offered to a broader public.'

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## Convention

In statutes and regulations, the modal verb has always wide scope over the subject (de-dicto modality).

# Legislative drafting in the Swiss federal administration

- drafts go through several editing cycles
- Central Language Services of the Federal Chancellery ensures
  - equivalence of the language versions
  - linguistic quality of the draft (including compliance with the guidelines)
- Linguistic guidelines for legislative drafting
  - issued by the Swiss Federal Office of Justice as well as by several cantonal governments
  - recommendations
  - not very systematic, not comprehensive



# Anaphora resolution

## Example from the guidelines of the canton of Zurich

<sup>1</sup>Die Kantone können Fachhochschulen einrichten.

<sup>2</sup>**Sie** werden selbständig geleitet.

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# Indefinite noun phrases in subject position I

§ 67 Abs. 2 UniO UZH

**Ein Mitglied** der Universitätsleitung führt den Vorsitz.

'**A member** of the executive board of the university takes the chair.'



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**Ein Titel** [...] kann [...] entzogen werden, wenn die Inhaberin oder der Inhaber die Interessen der Universität ernsthaft verletzt.

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## Proposed standard

In subject position, indefinite noun phrases are only used in the generic sense.

## Indefinite noun phrases in subject position III

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Rephrase (e.g. as a passive construction)

Der Vorsitz wird **von einem Mitglied** der Universitätsleitung geführt.

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**Additional advantage:**

The subject now correctly designates what the norm is *about*.

## Plural ambiguity (distributive vs. collective reading)

### Art. 12 BGG

**Die Richter und Richterinnen** können ihren Wohnort [...] frei wählen.  
'**The judges** can freely choose their place of residence [...].'

### Art. 60 Abs. 2 BGG

Haben **die Bundesrichter und Bundesrichterinnen**  
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# Implicit anaphoric references

## Art. 55 Abs. 1 AngO ETH-Bereich<sup>3</sup>

Bei der Geburt **eines Kindes** hat der Angestellte Anspruch auf eine einmalige Zulage von 530 Franken.

'Upon the birth of **a child**, the employee is entitled to a one-time allowance of 530 francs.'

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→ control in analogy to pronouns

## Proposed standard

Relational nouns always refer to the subject of the main clause or, if they are part of the subject, to the subject of the immediately preceding sentence.

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(pronouns, relational nouns)
- **functional ambiguities**  
(arising from the relatively free German word order)



# Next steps and future research



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- designing **authoring tools**
- composing a **user guide** for the standard (refining existing guidelines)



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. . . but it can get some major obstacles out of the way.

- instances of lexical ambiguity
- instances of syntactic ambiguity
- instances of semantic ambiguity

## Potential and limitations II

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## Preconditions

- institutionalised role of professional legal editors
- improvement also for human interpretability, translatability
- availability of useful applications (IR, expert systems, ...)

Crucial: acceptability of the standard to legal editors.

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## Required

Syntactically and semantically **annotated corpora** of legal texts.

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*Homepage of the Collegis project*

<http://www.cl.uzh.ch/research/cnl/collegis.html>