Guided Convergence
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Language comparison

Language X
- e.g. Java as defined in the
  "Java Language Specification"
  by Gosling, Joy, Steele, Bracha

Language Y
- e.g. Java as actually accepted
  by the javac compiler

Grammar identity

Grammar X
- the grammar in a broad sense
  that defines the language
  (e.g. in EBNF, XSD, UML, Ecore)

Grammar Y₁
- this grammar in a broad sense
  identical to the grammar X
  to the smallest detail

nominal equivalence

F ::= N "(" (A ",")* ")" (= B)?;

vs.

F ::= N A* B?;

Grammar Y₂
- this grammar uses the same
  nonterminals as grammar X
  and just as many production
  rules that we can map to rules of X

structural equivalence

F ::= N "(" (A ",")* ")" (= B)?;

vs.

G ::= Id D? P+ W;

Grammar Y₃
- nonterminals of Y do not match with
  nonterminals of X,
  but we think they should

X Signatures
- I,*,?,+

Y₃ Signatures
- I,?,*,I

case study:

ANTLR
- converged

DCG
- converged

Rascal
- converged

XML Schema
- converged

JAXB
- converged

Java
- converged

Python
- converged

SDF
- converged

EMF
- converged

TXL
- converged

ADT
- converged

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