

Guided Convergence

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<http://grammarware.net>

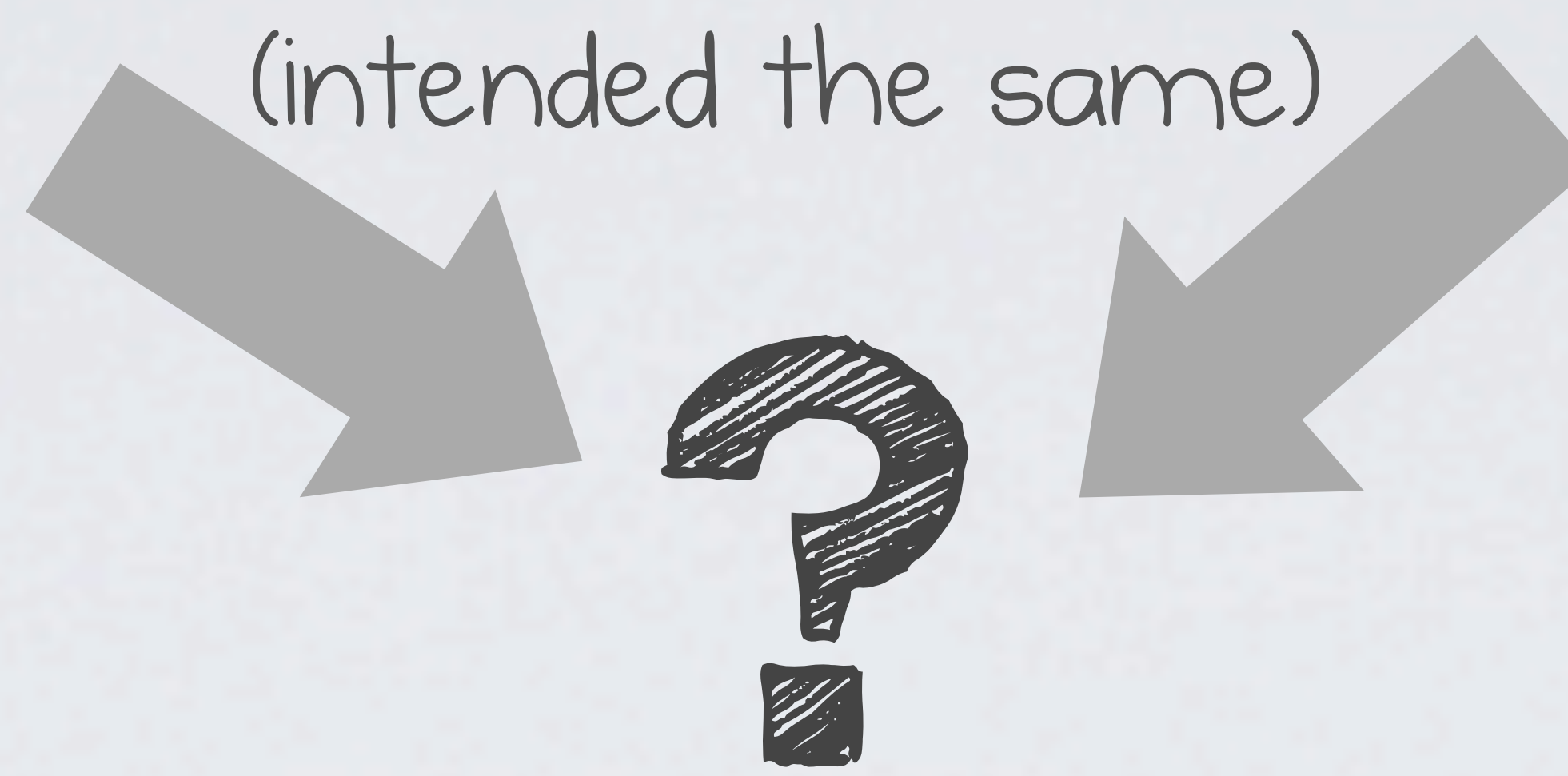
language comparison

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



defines

defines

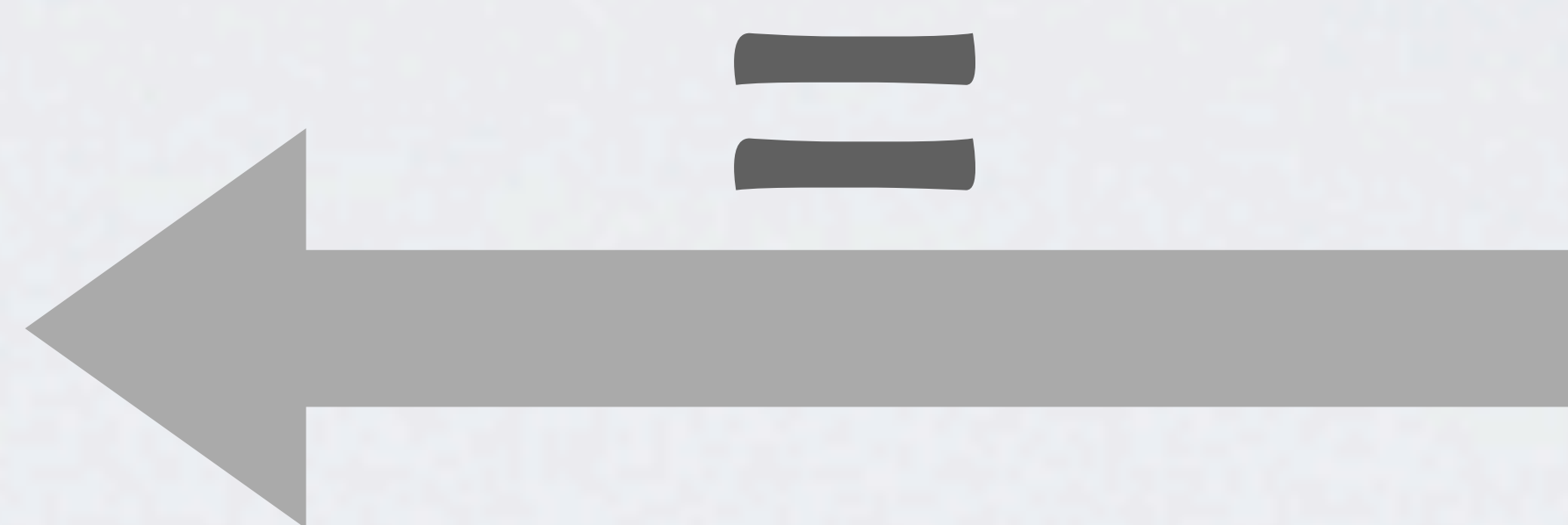
grammar identity

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

$F ::= N "(" \{A \text{ ","} \}^* ")" ("=" B)?;$

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

bijectional mapping of production rules

structural equivalence

$F ::= N "(" \{A \text{ ","} \}^* ")" ("=" B)?;$

VS.

$G ::= Id D? P+ W;$



Grammar Y₃

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

name mapping for nonterminals

extracting basic structure from each production rule

extracting basic structure from each production rule

X Signatures

I,*,?

Y₃ Signatures

I,?,+,I

case study:

