Editor support for formal specifications

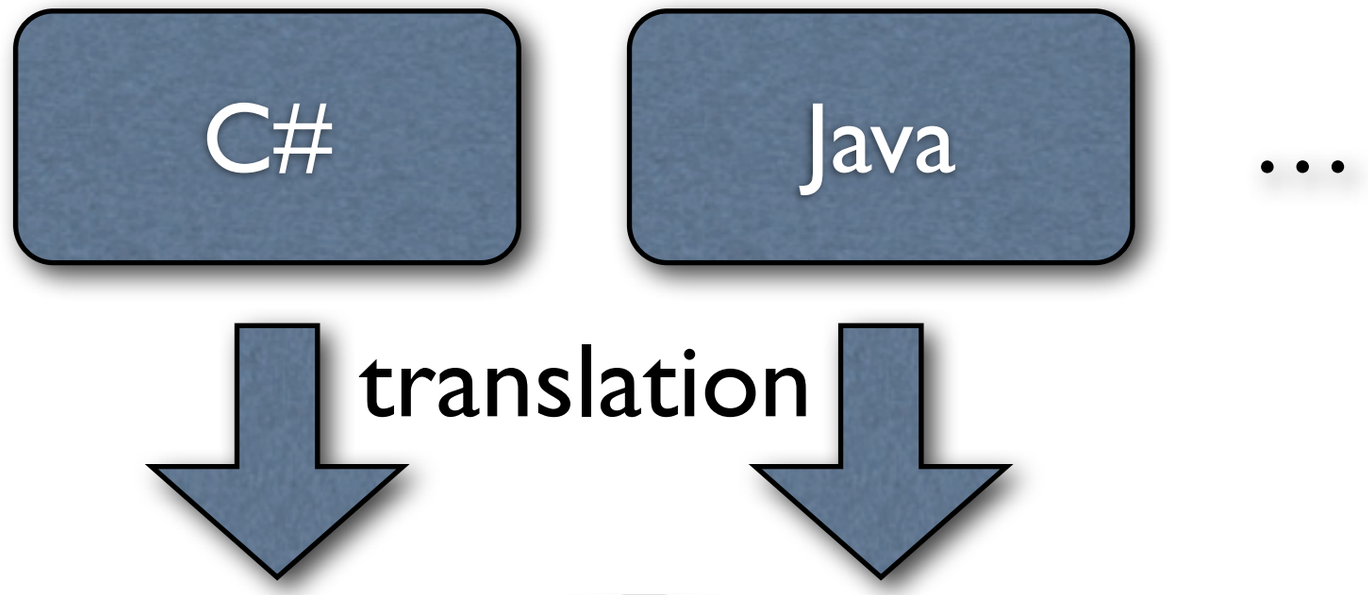
(incl. component-based semantics)

Peter D Mosses, Swansea University

IFIP WG 2.2 Meeting, 25 September 2013, Lisbon

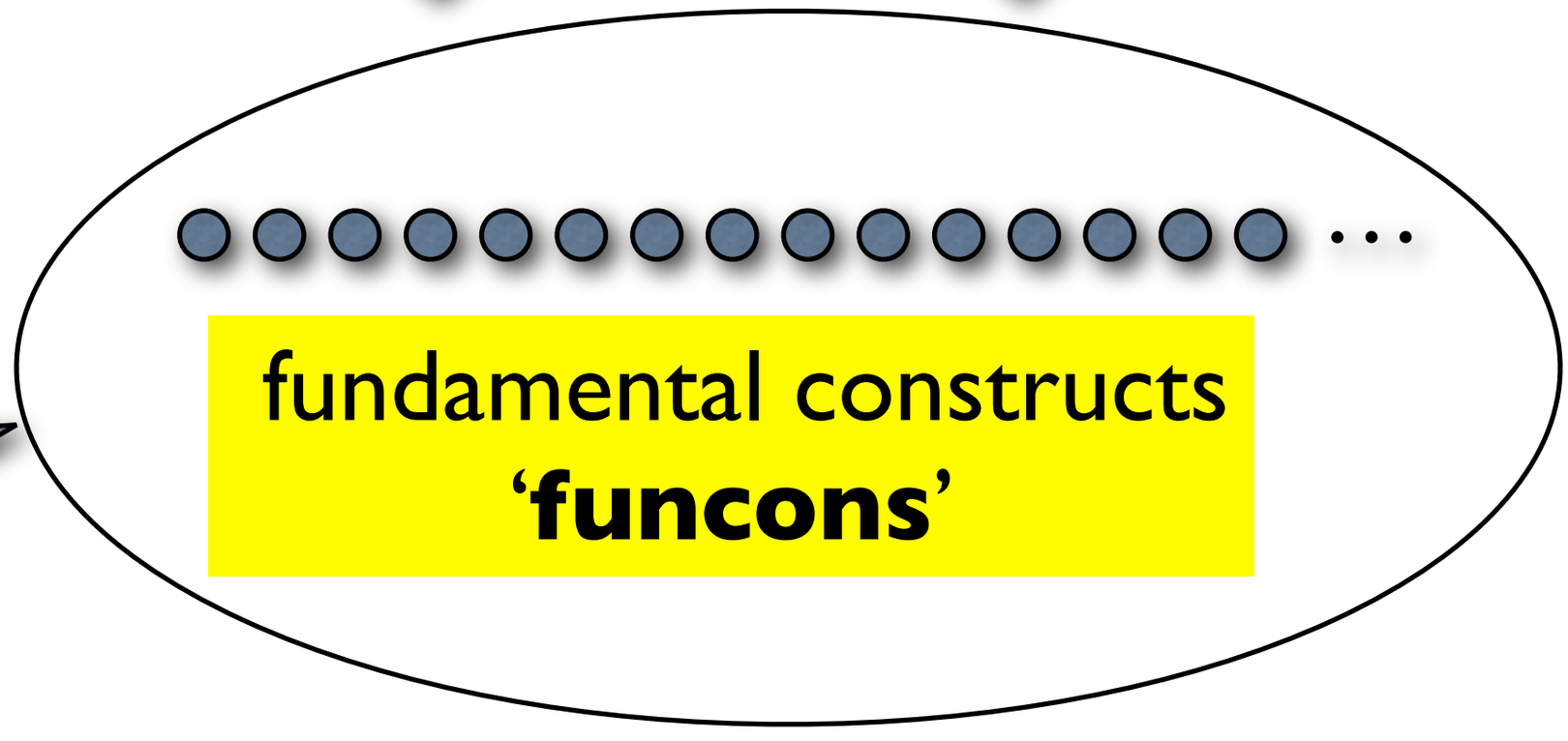
PLANCOMPS

Programming Languages (incl. DSLs)



Components and their Specifications

reusable



Component-based specifications

Syntax (concrete, abstract)

- BNF + regular expressions

Semantics (static, dynamic)

- context-free translation to funcons

Funcons

- Modular SOS rules
- modular bisimilarity theory

Preliminary tool support

Editing language specifications :

- **Spoofax/Eclipse**

Parsing, translation to funcons :

- **ASF+SDF** (migrating to **Spoofax**)

Funcon interpretation :

- **Prolog** (rules transformed to big-step)

Spoofax

– an editor generator –

OOPSLA/SPLASH 2010

The Spoofax Language Workbench

Rules for Declarative Specification of Languages and IDEs

Lennart C. L. Kats
Delft University of Technology

Eelco Visser
Delft University of Technology

Spoofax is a language workbench for efficient, agile development of textual domain-specific languages with state-of-the-art IDE support.

Spoofax integrates language processing techniques for parser generation, meta-programming, and IDE development into a single environment. It uses concise, declarative specifications for languages and IDE services.

SPLASH 2012

The Spoofax Name Binding Language

Gabriël D. P. Konat, Vlad A. Vergu, Lennart C. L. Kats, Guido H. Wachsmuth, Eelco Visser

In this poster, we present the Spoofax Name Binding Language (NBL), a declarative meta-language for the specification of name binding and scope rules […].

NBL aspires to become the universal language for name binding, which can be used next to BNF definitions in reference manuals, as well as serve the generation of implementations.

SLE 2012

Declarative Name Binding and Scope Rules

Gabriël Konat, Lennart Kats, Guido Wachsmuth, and Eelco Visser

Delft University of Technology, The Netherlands
g.d.p.konat@student.tudelft.nl,
{l.c.l.kats,g.h.wachsmuth,e.visser}@tudelft.nl

[…] we identify recurring patterns for name bindings in programming languages and introduce a declarative meta-language for the specification of name bindings in terms of namespaces, definition sites, use sites, and scopes

Demo

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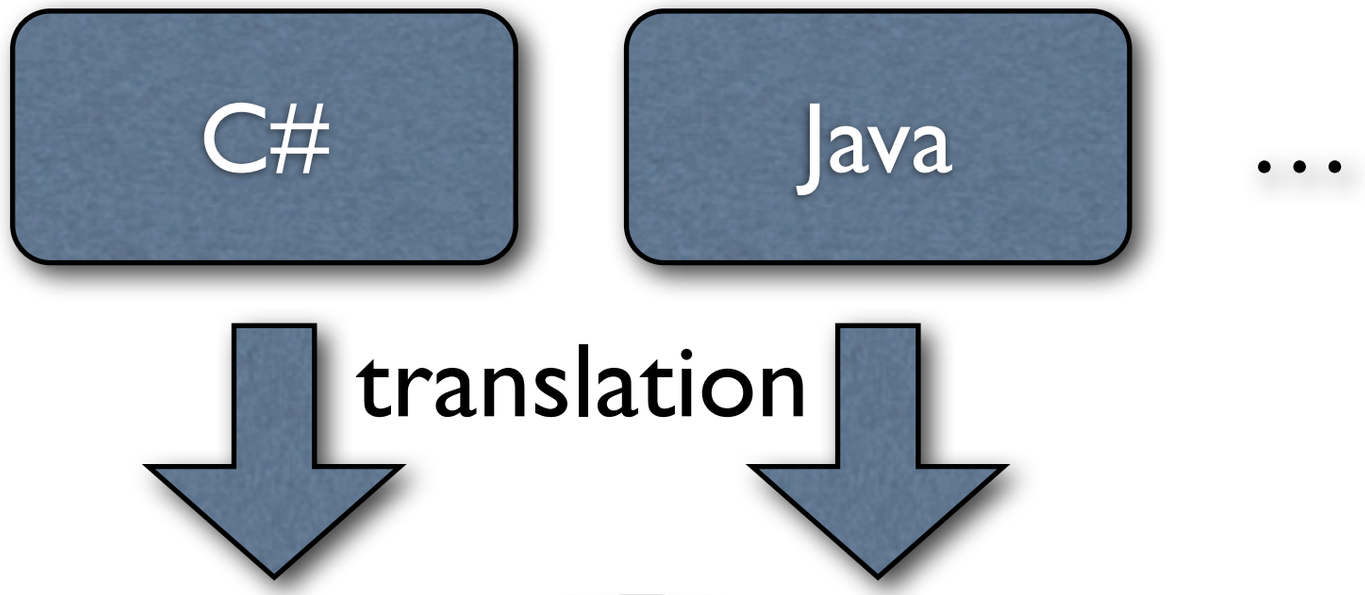
Programming Languages (incl. DSLs)



Components and their Specifications

reusable