

Domain Specific Language Models

scg.unibe.ch
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Context Specific Languages
with Homogeneous Tool Integration

<http://scg.unibe.ch/research/helvetia>

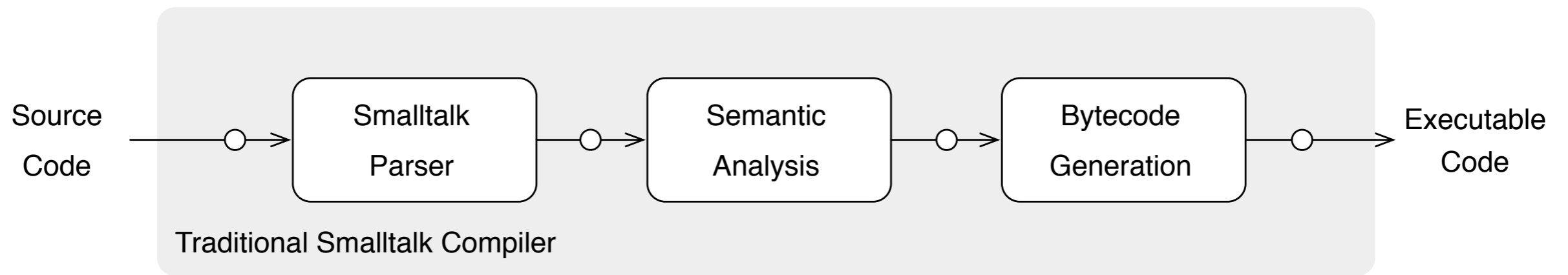
Multiple Context Specific Languages

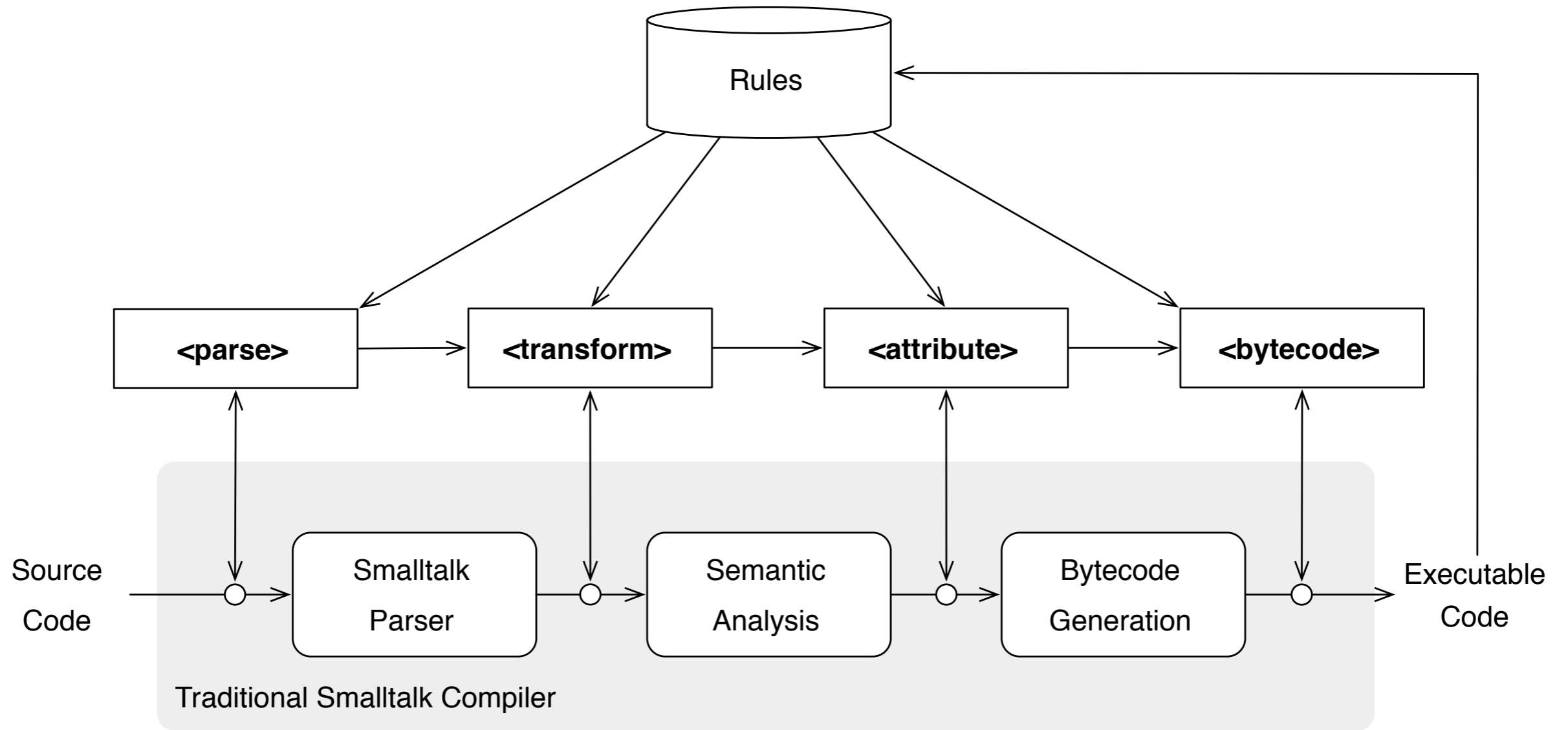
Homogeneous Language Integration

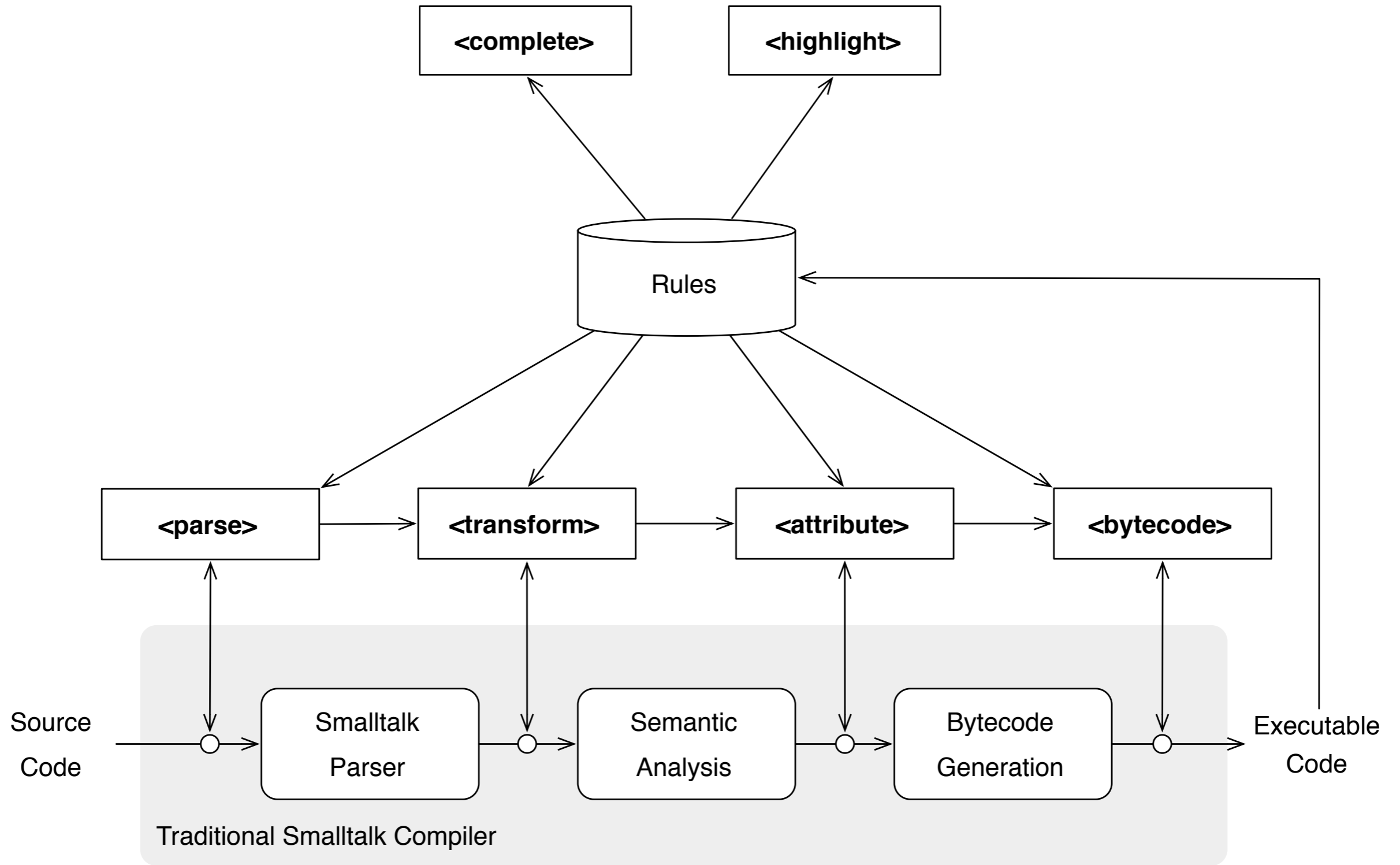
Homogeneous Tool Integration

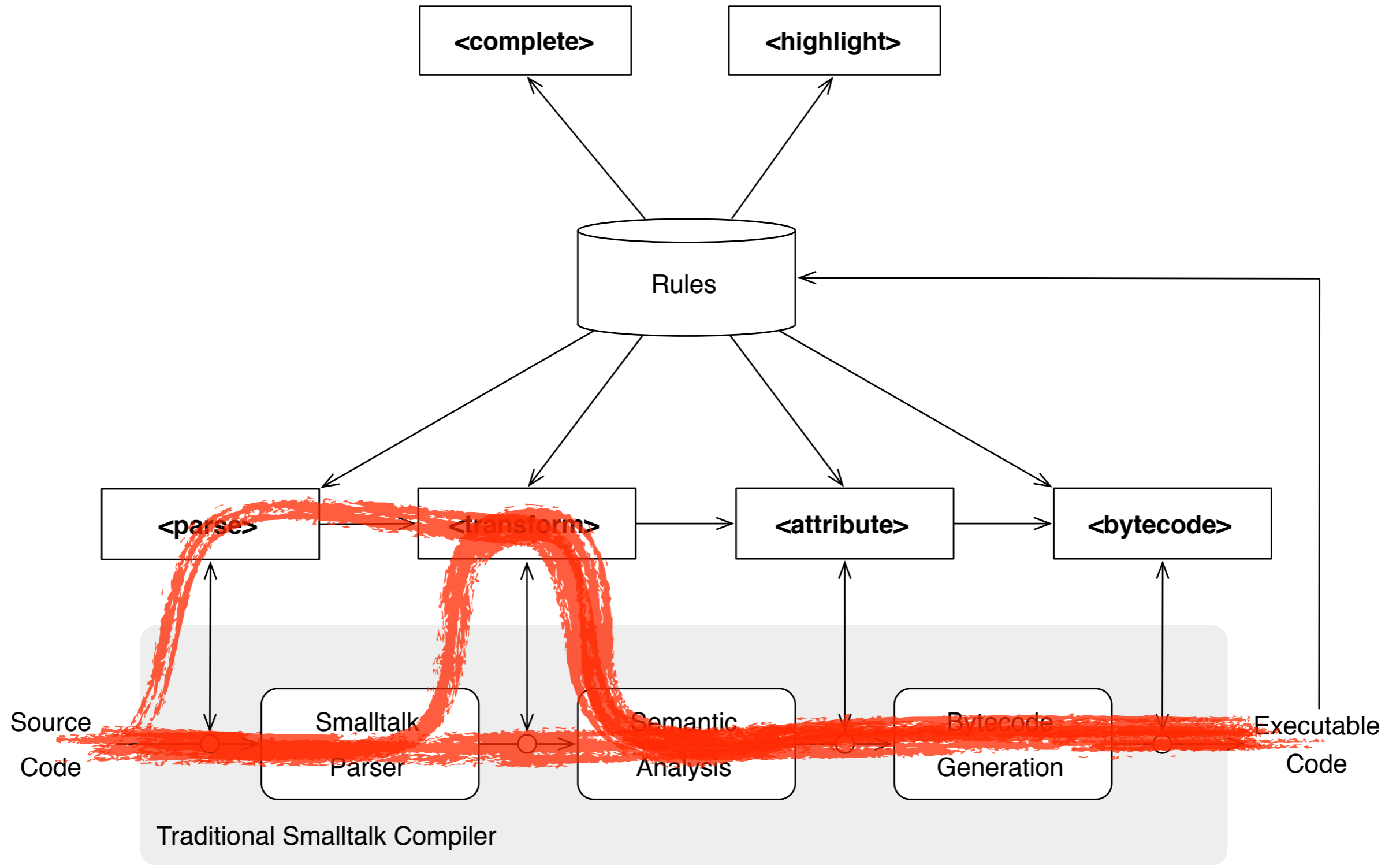


The Helvetia Model









Scoping of Languages

Homogenous Embedding

Tool Integration

The image shows a debugger window titled "Debugger: Halt". The window contains a stack of frames and a code editor. The stack frames are:

- MOLabelShape>>text:
- MondrianCreole>>buildOn: (highlighted)
- MondrianCreole(MondrianExample)>>open

Navigation buttons are visible: into, out, over, proceed, restart, return, terminate, through.

The code editor shows the following code:

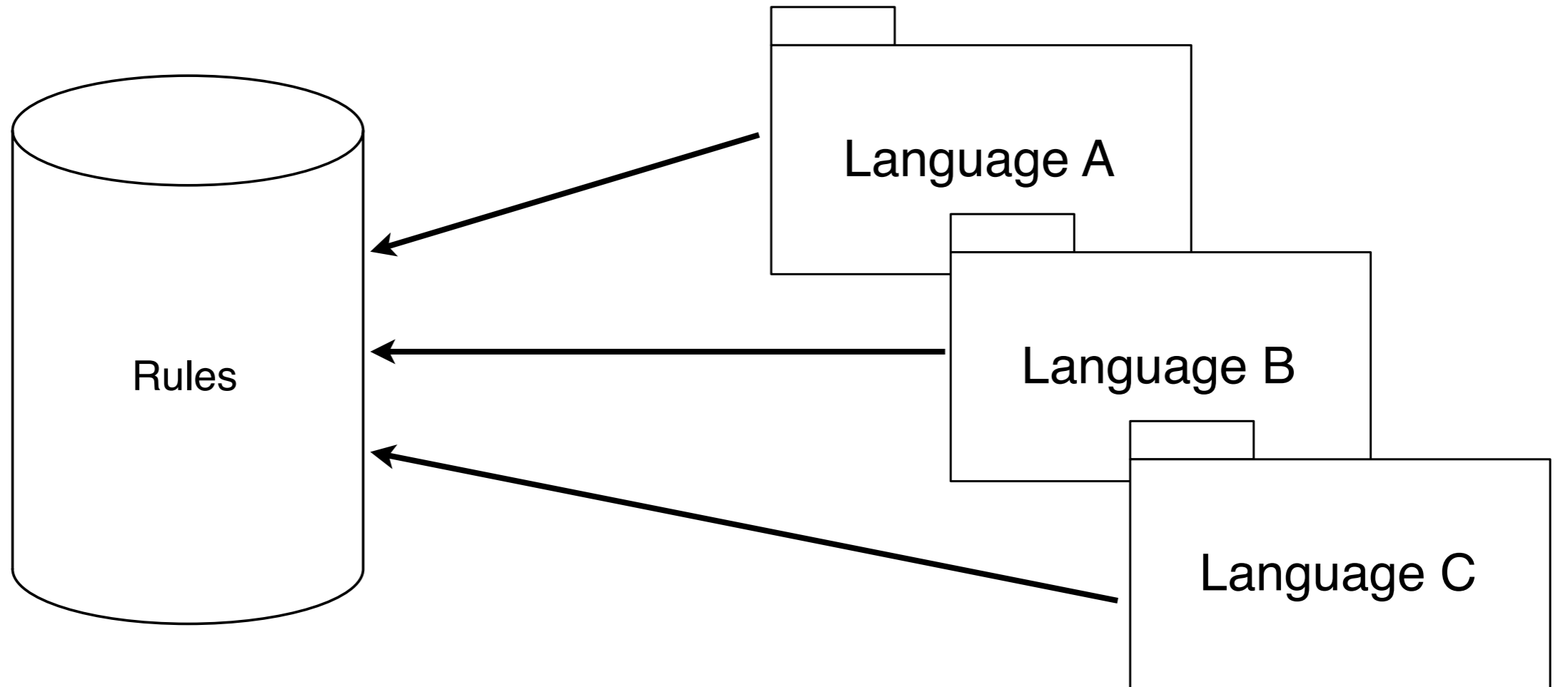
```
buildOn: aBuilder

  shape {
    cols: #grow, #fill;
    rows: #grow, #fill;
  }

  label {
    position: 1, 1;
    text: [ :each | each name ];
    borderColor: #black;
    borderWidth: 1;
  }
```

The execution context at the bottom is divided into three panes:

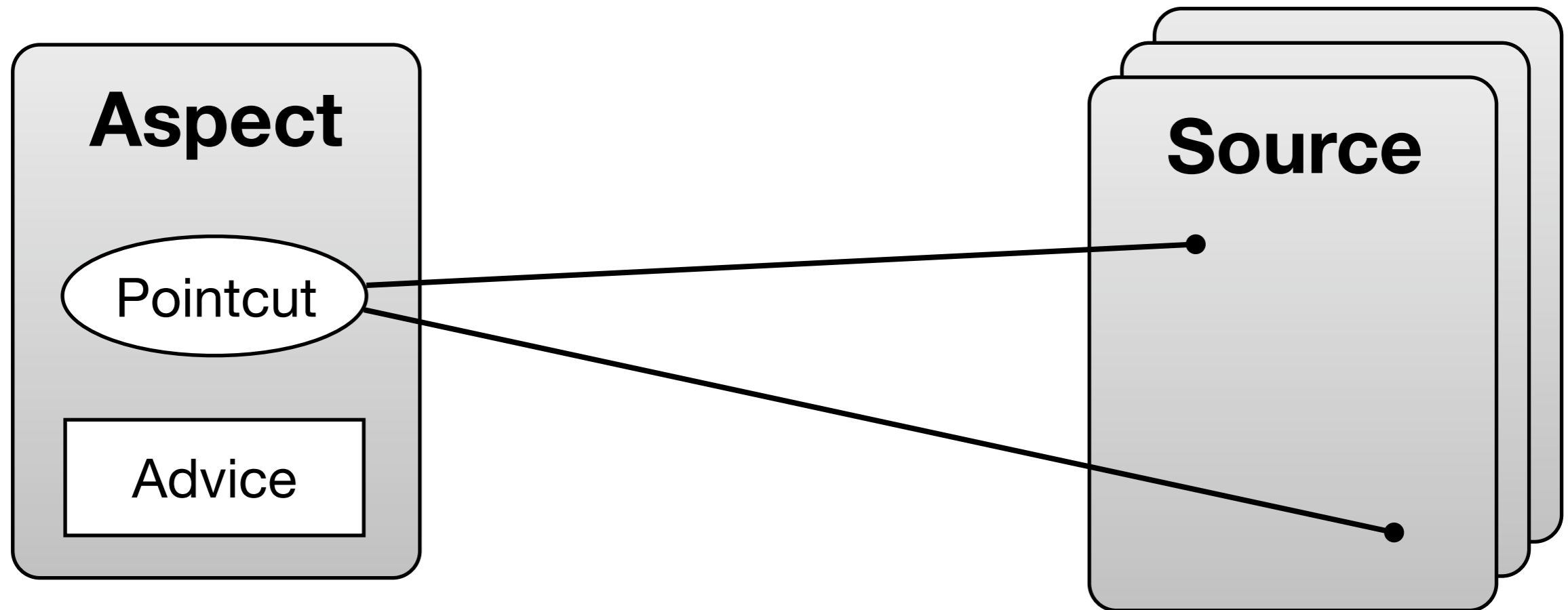
- (thisContext)**: Shows the object `aBuilder` and the method `each`. Below are buttons for `+`, `1`, and `#`.
- MondrianCreole>>bui**: Shows the method `ldOn:`.
- (self)**: Shows the object `a MondrianCreole`. Below are buttons for `1` and `#`.



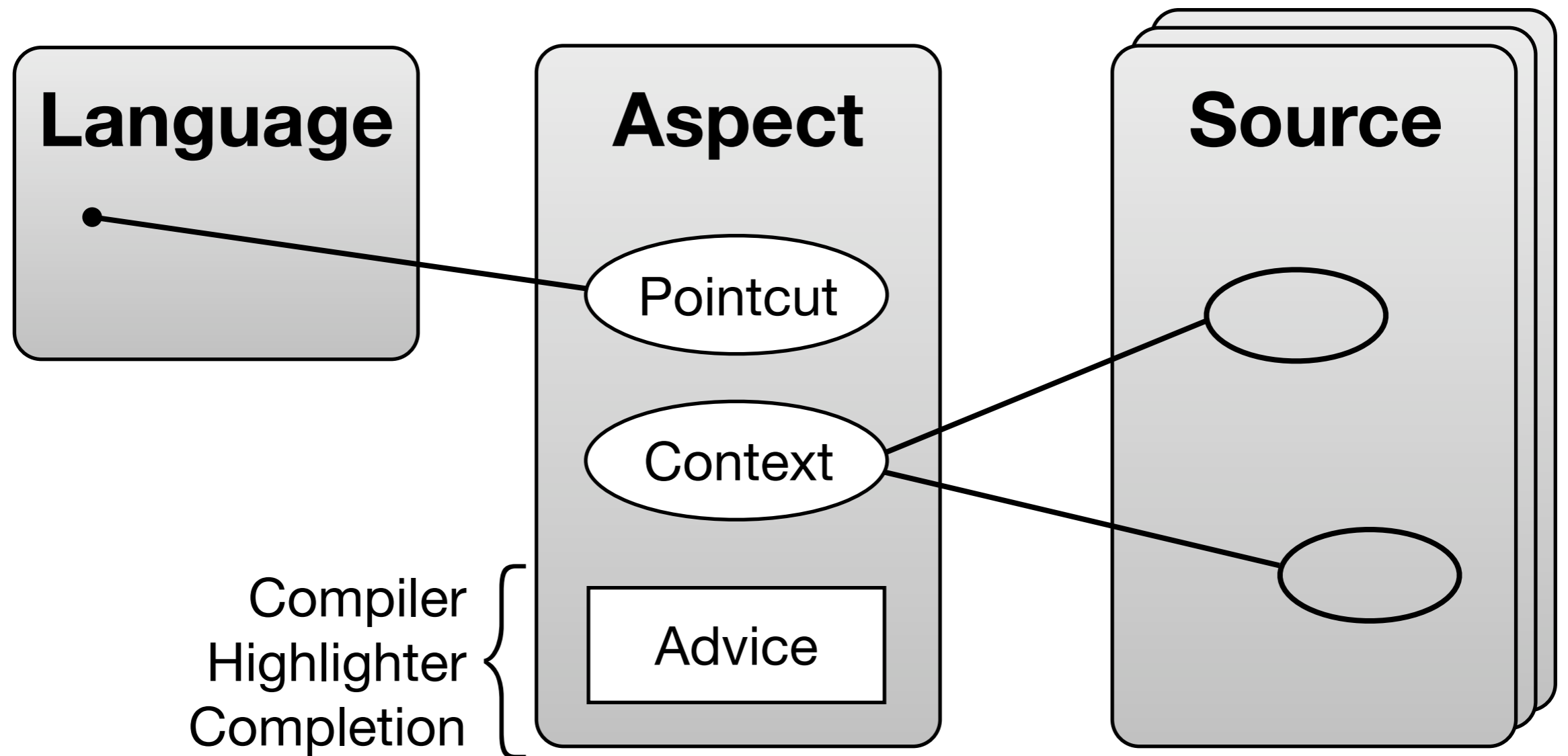
Language Aspects



Aspects



Language Aspects



**Start with
Host Language**

Crosscutting





Modular

Integration

The screenshot displays the 'OB System Browser: LARegexpAspect' window. The left pane shows a tree view with 'LanguageAspects-E' selected. The middle pane lists several classes, with 'LARegexpAspect' highlighted. The right pane shows a list of methods: 'compile:', 'highlight:', 'parser:', and 'pointcut'. Below the panes are tabs for 'browse', 'hierarchy', 'variables', 'implementors', 'inheritance', 'senders', 'versions', and 'view...'. The main area shows the class definition for 'LARegexpAspect' as a subclass of '#LARegexpAspect', with instance and class variable names, pool dictionaries, and a category. A context menu is open over the main area, listing actions like 'browse scope', 'disable aspect', 'inspect aspect', 'recompile users', 'browse aspect', 'add aspect...', and 'remove aspect...'.

OB System Browser: LARegexpAspect

DSL-Completion
DSL-Tests
Cutie-Examples
Cutie-Parser
LanguageAspects-C
LanguageAspects-D
LanguageAspects-T
LanguageAspects-E
LanguageAspects-C
EBNF-Number
EBNF-Parser

LACrosscuttingTest
LAPathAspect
LAPathAspectTest
LARegexpAspect
LARegexpAspectTest

-- all --
accessing
concerns

compile:
highlight:
▲ parser:
◆ pointcut

instance ? class trait

browse hierarchy variables implementors inheritance senders versions view...

LAAspect subclass: #LARegexpAspect
instanceVariableNames: ""
classVariableNames: ""
poolDictionaries: ""
category: 'LanguageAspects-Examples'

browse scope
disable aspect
inspect aspect
recompile users
browse aspect
add aspect...
remove aspect...

Demo

Future Work

API Skins

Language Migrations

Glamour



Helvetia

scg.unibe.ch/research/helvetia