Type Inference for Pharo

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September 30, 2015

Outline

1. Objectives
2. Definitions
3. Types in Pharo
4. Proposed Solution
5. Demo
6. Next Steps

Objectives

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- Memory / Processor efficiency

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- Language conventions or idiomatic usages.

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- The information is built in the programmers head.
- The programmer usually starts navigating all or part of the code.
- The programmer uses a lot of past experiences and conventions. Example: if you have a variable receiving *do:*, *add:* and *size*. It's somethins collection-like!

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- So... we don't need you. We can do it by us!
- Maybe... but the idea is to improve productivity, help the new comers and ease the learning curve.

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- Mixing Concrete and Abstract types Giving all the information, you can use whatever you want.
- Using *Human like* heuristics. I want to add heuristics for idiomatics and normal usages of the environment
- Mixing static analysis and abstract program execution.

How does it works?

- It builds subtyping dependency graph in an static analysis, including sent messages to each expression.
- Then transverse the graph to get the information.
- Applying the subtype information, filtering by messages and using the heuristics.

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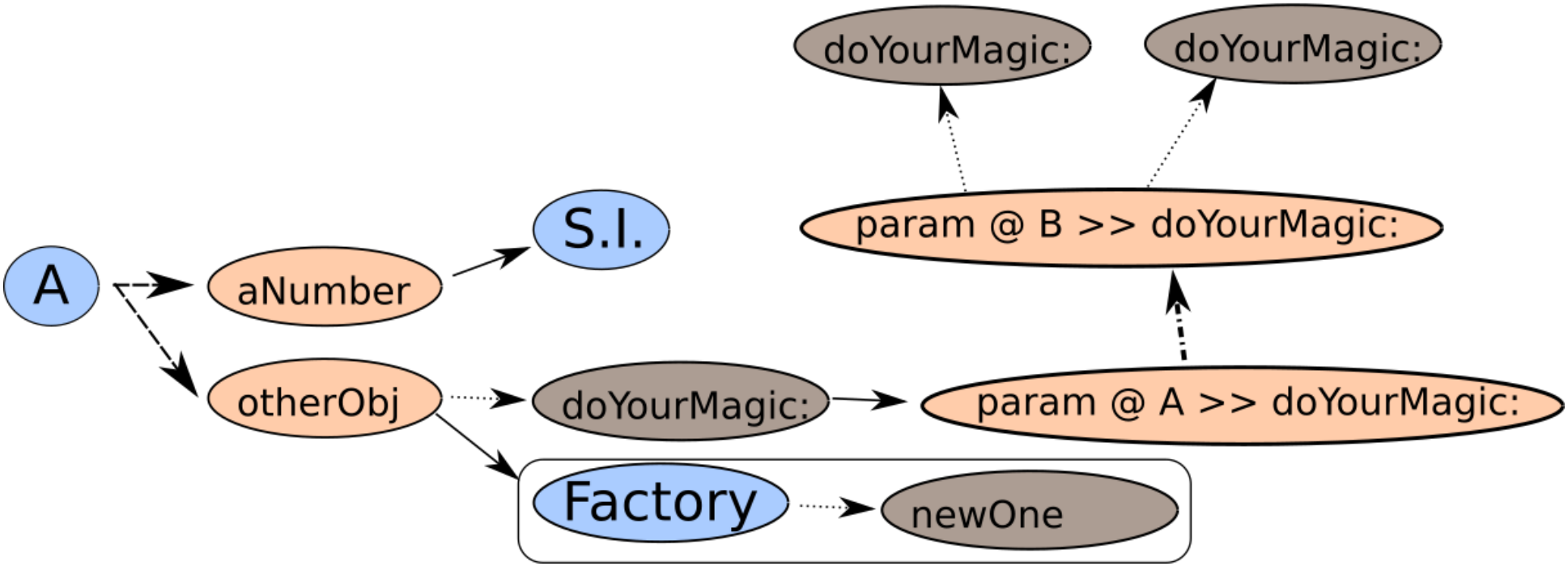
  - If the code is changed, the graph has to be updated, only the changed parts (If not, it will not be incremental!)

How does it works? (III)

```
Class A (otherObject, aNumber)
A>>initialize
  aNumber := 23
  otherObj := Factory newOne.
A>>doYourMagic: param
  otherObj doYourMagic: param
```

```
Factory class >> newOne
  ^ B new
```

```
B>>doYourMagic: param
  param msg1 ; msg2
```



Demo

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Comments!

- Continuation of a previous work with Nicolás Passerini.
- Same objectives and restrictions.
- A clean implementation.
- Includes different ideas, not constraint based, but the static analysis is nearly the same.
- The result of learning a lot side by side.

- Questions???

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- Thanks a lot!