

`thisContext` in the Debugger

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Problem

The screenshot shows an IDE with a debugger window titled "Halt". The stack trace shows the following entries:

| Class | Method | Package |
|-----------------|---------|---------|
| MyClass | example | |
| UndefinedObject | Dolt | - |

The code editor shows the following code:

```
1 example  
2 thisContext method selector = #example ifTrue: [ self halt ]
```

The inspector window, titled "Inspector on MyClass>>Dolt", shows the following variables and values:

| Variable | Value |
|--------------|----------------|
| self | MyClass>>Dolt |
| sender | nil |
| pc | nil |
| stackp | 0 |
| method | MyClass>>#Dolt |
| closureOrNil | nil |
| receiver | a MyClass |

The "a MyClass" window shows the following variables and values:

| Type | Variable | Value |
|---------|-------------|------------------|
| implici | self | MyClass |
| implici | stackTop | emptyStack |
| implici | thisContext | MyClass>>example |
| implici | Exception | Halt |

A red arrow points from the "thisContext" variable in the code to the "thisContext" variable in the inspector.

Problem

- When reading thisContext in the Debugger via inspect-it (or during dolt execution) is not correct
- It is the context of the Dolt (!)

Fixed in Pharo12

The screenshot shows the Pharo IDE's debugger interface. At the top, the window title is "Halt". Below it is the "Stack" window, which contains the following entries:

| Class | Method | Package |
|-----------------|---------|---------|
| MyClass | example | - |
| UndefinedObject | Dolt | - |

Below the stack is a toolbar with various debugging actions: Proceed, Into, Over, Through, Run to, Restart, Return, Where is?, Create, and Advanced Step.

The main editor shows the following code:

```
1 example  
2 thisContext method selector = #example ifTrue: [ self halt ]
```

The variable `thisContext` on line 2 is highlighted in blue. A red arrow points from this variable to the "Inspector on MyClass>>example" window. The inspector shows the following information:

Inspector on MyClass>>example

a context (MyClass>>example)

Raw | Method Source | Breakpoints | Meta

| Variable | Value |
|--------------|-----------------------|
| self | MyClass>>example |
| sender | UndefinedObject>>Dolt |
| pc | 73 |
| stackp | 0 |
| method | MyClass>>#example |
| closureOrNil | nil |
| receiver | a MyClass |

At the bottom of the IDE, there is a window titled "a MyClass" showing a list of variables:

| Type | Variable | Value |
|---------|-------------|------------------|
| implici | self | a MyClass |
| implici | stackTop | emptyStack |
| implici | thisContext | MyClass>>example |

A red arrow points from the `thisContext` variable in this window to the `thisContext` property in the inspector window above.

Fixed in Pharo12

- thisContext in the Debugger is the context that the debugger is in
- For inspect / print / DoIt

How?

- In Pharo Variables are Objects
- There is ThisContextVariable
- Wrapped in a DoltVariable which adds the Context
- Compiler emits code:
 - push the dolt Variable
 - send #read

All Details

<https://blog.marcusdenker.de/improving-thiscontext-in-the-debugger-using-first-class-variables>