

`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:

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 variable inspector shows the following variables:

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

The variable inspector also shows the following variables:

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 variable inspector to the "thisContext" variable in the code editor.

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 a table with columns "Class", "Method", and "Package". The stack trace shows:

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

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

At the bottom left, there is a window titled "a MyClass" showing a table of instance 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 table to the `thisContext` property in the inspector window.

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>