The Squeak Environment

Smalltalk Run-Time Architecture

Virtual Machine + Image + Changes and Sources

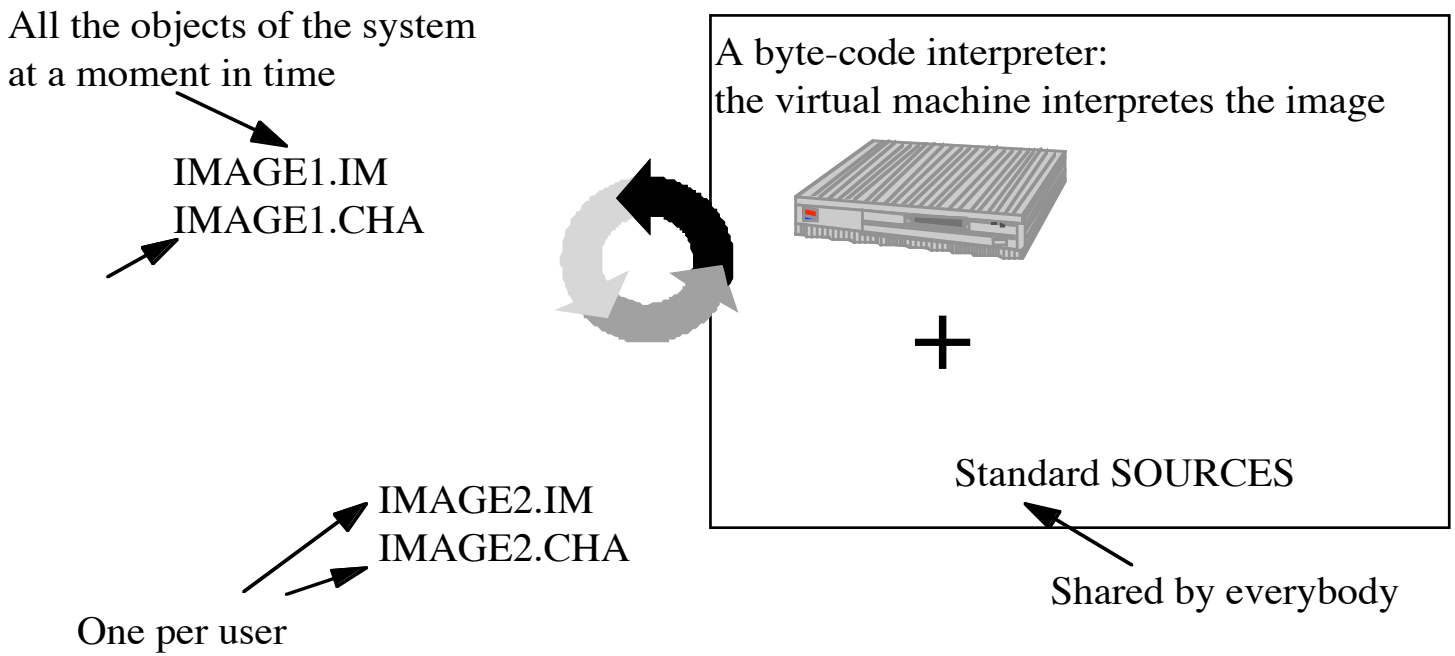


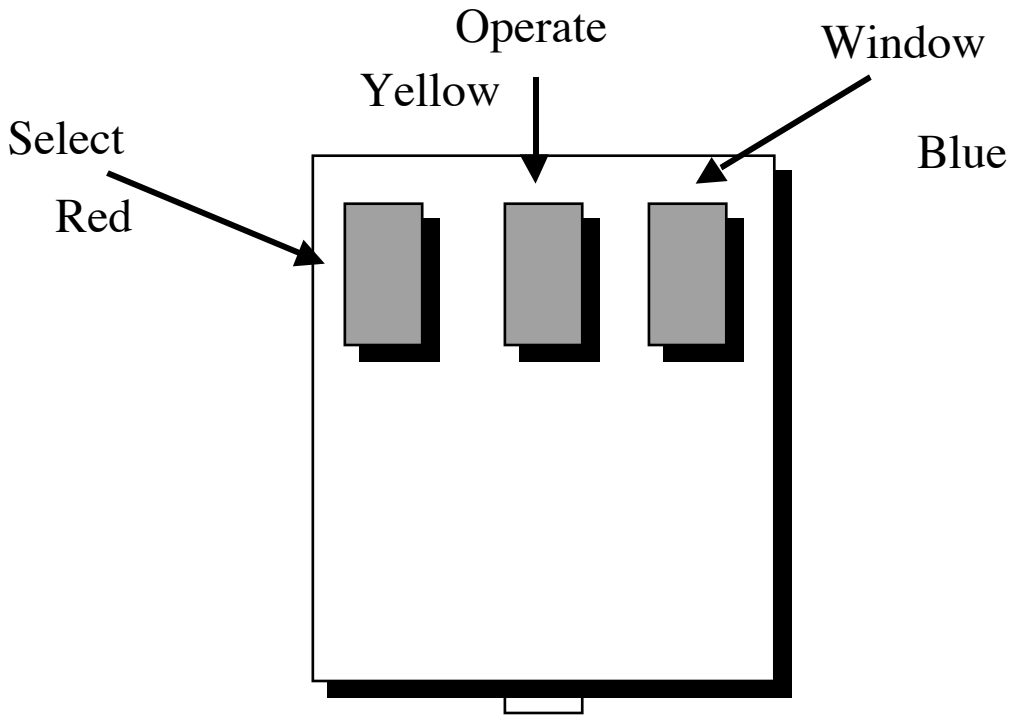
Image = bytecodes

Sources and changes = code (text)

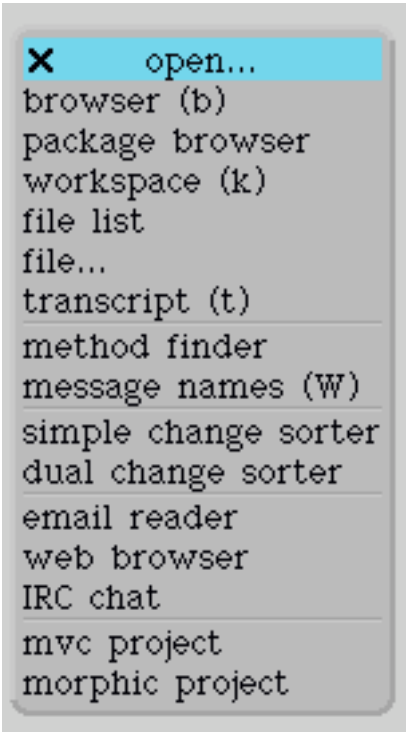
Runtime Architecture

- The byte-code is in fact translated into native code by a just-in-time compiler.
- The source and the changes are not necessary for interpreting the byte-code, this is just for the development. Normally they are removed for deployment.
- An application can be delivered as some byte-code files that will be executed with a VM. The development image is stripped to remove the unnecessary development components.

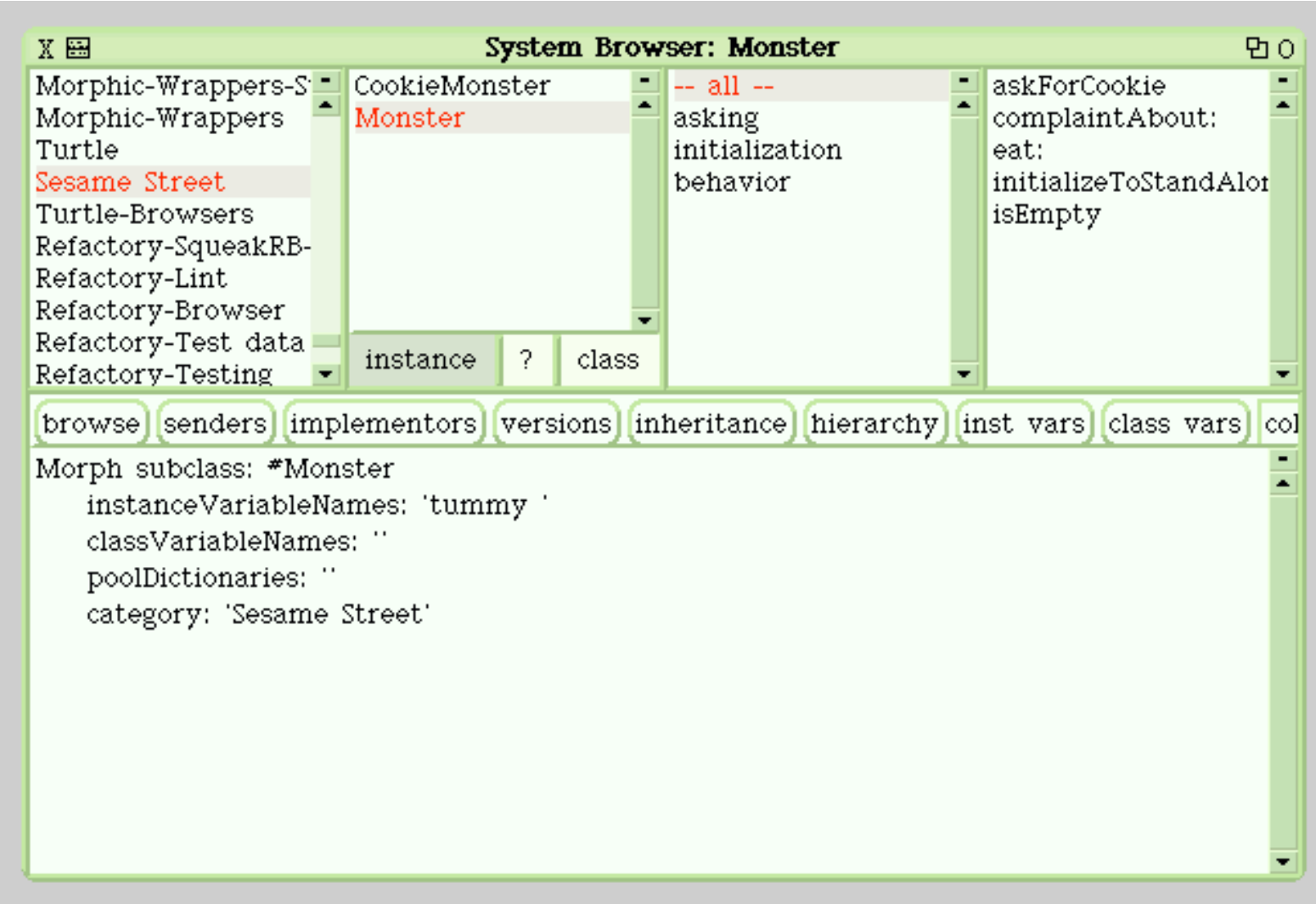
Mouse Semantics



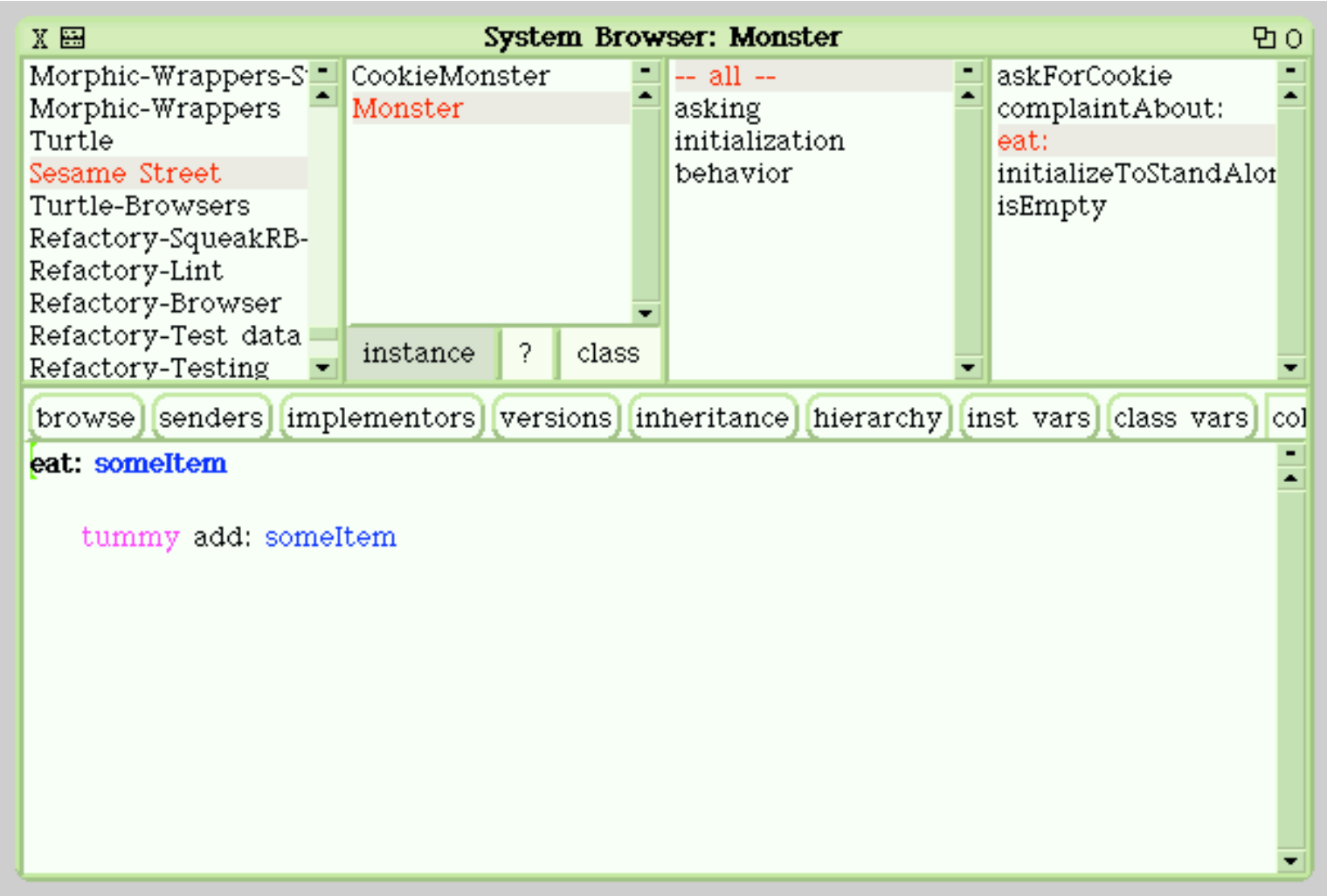
World Menu and Open Menu



Browsing a class

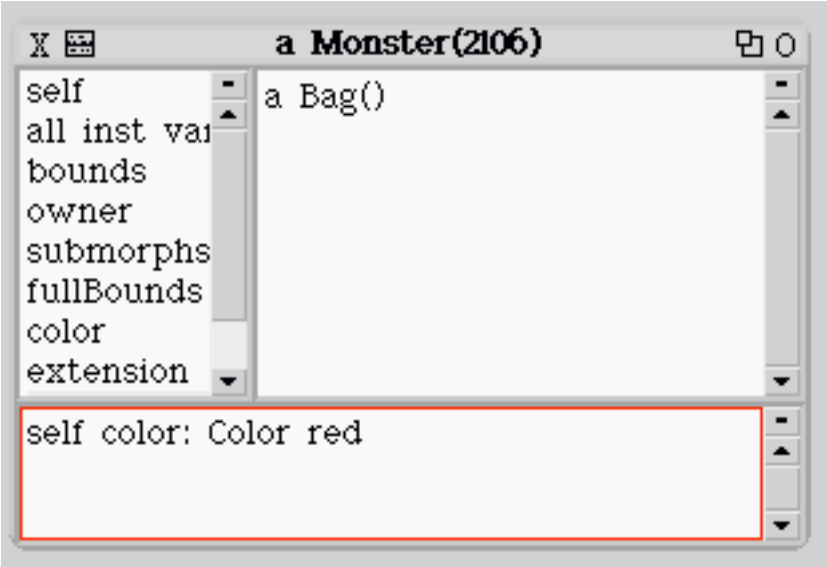


Browsing methods



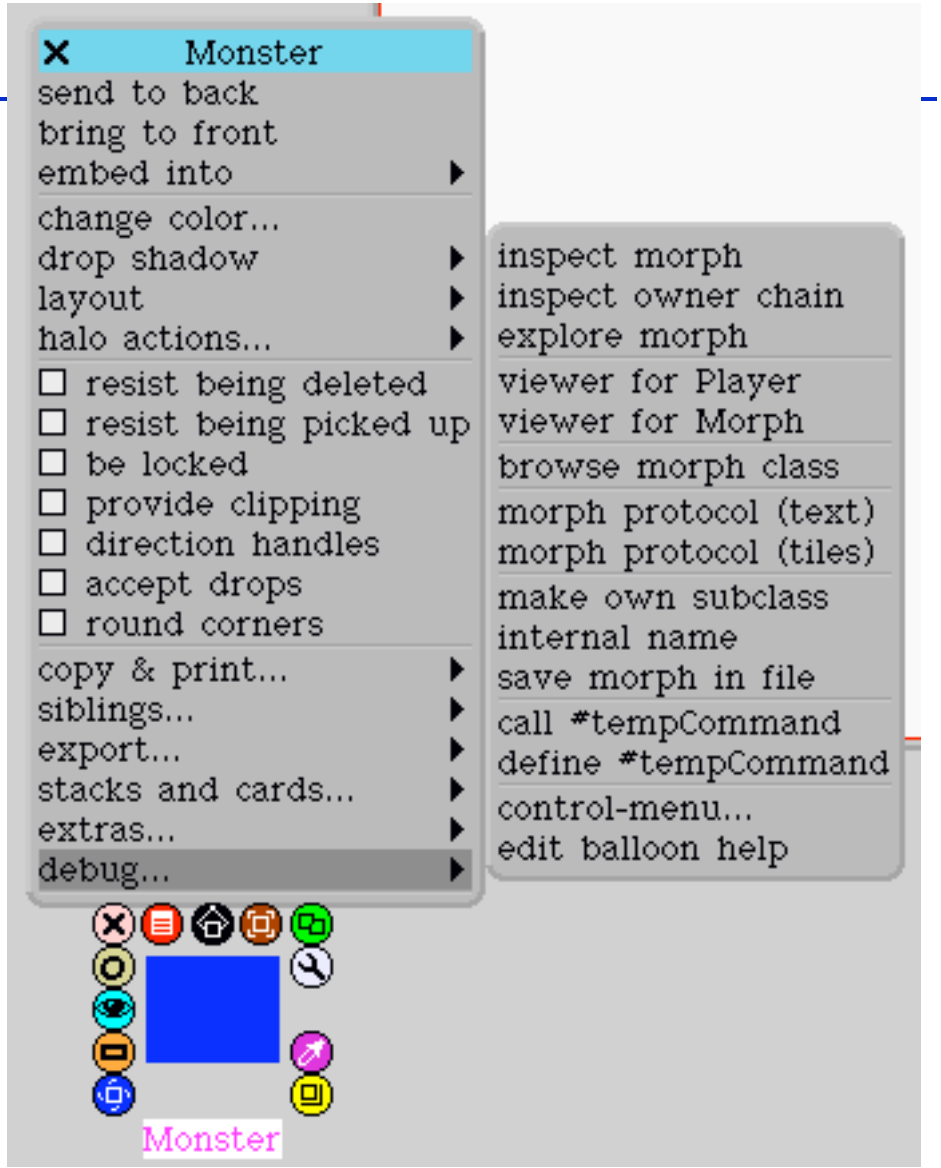
Inspector

- To look inside objects
- Violates encapsulation!!!
- Monster new inspect



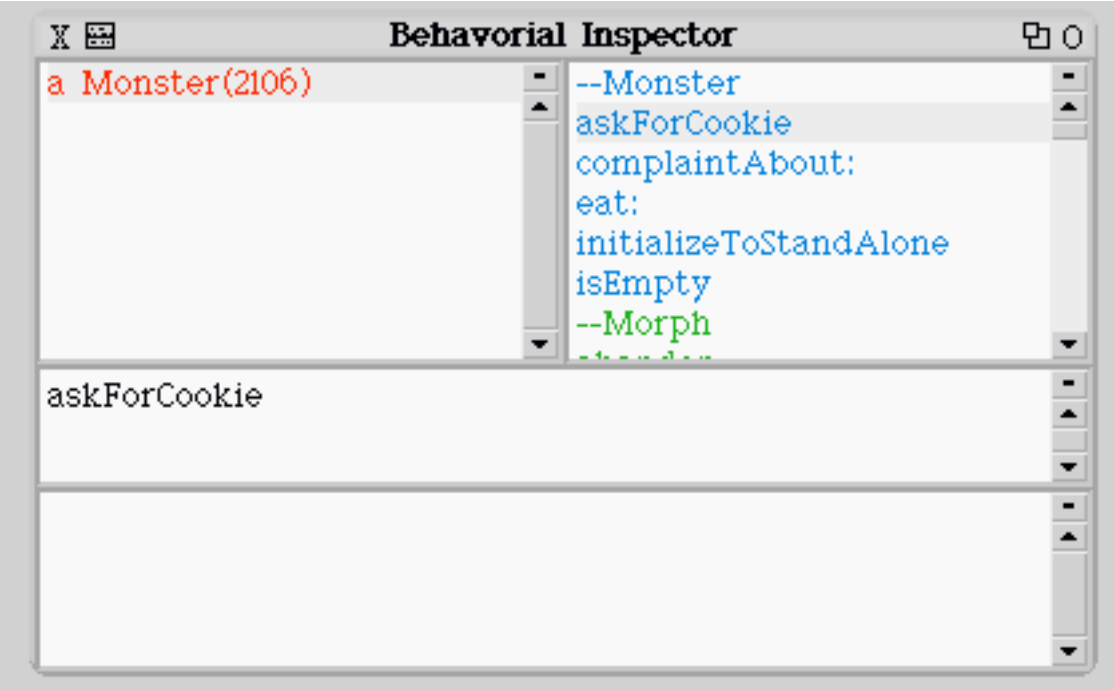
Direct Manipulation

- Bring the halo
- Experiment



Behavioral Inspector

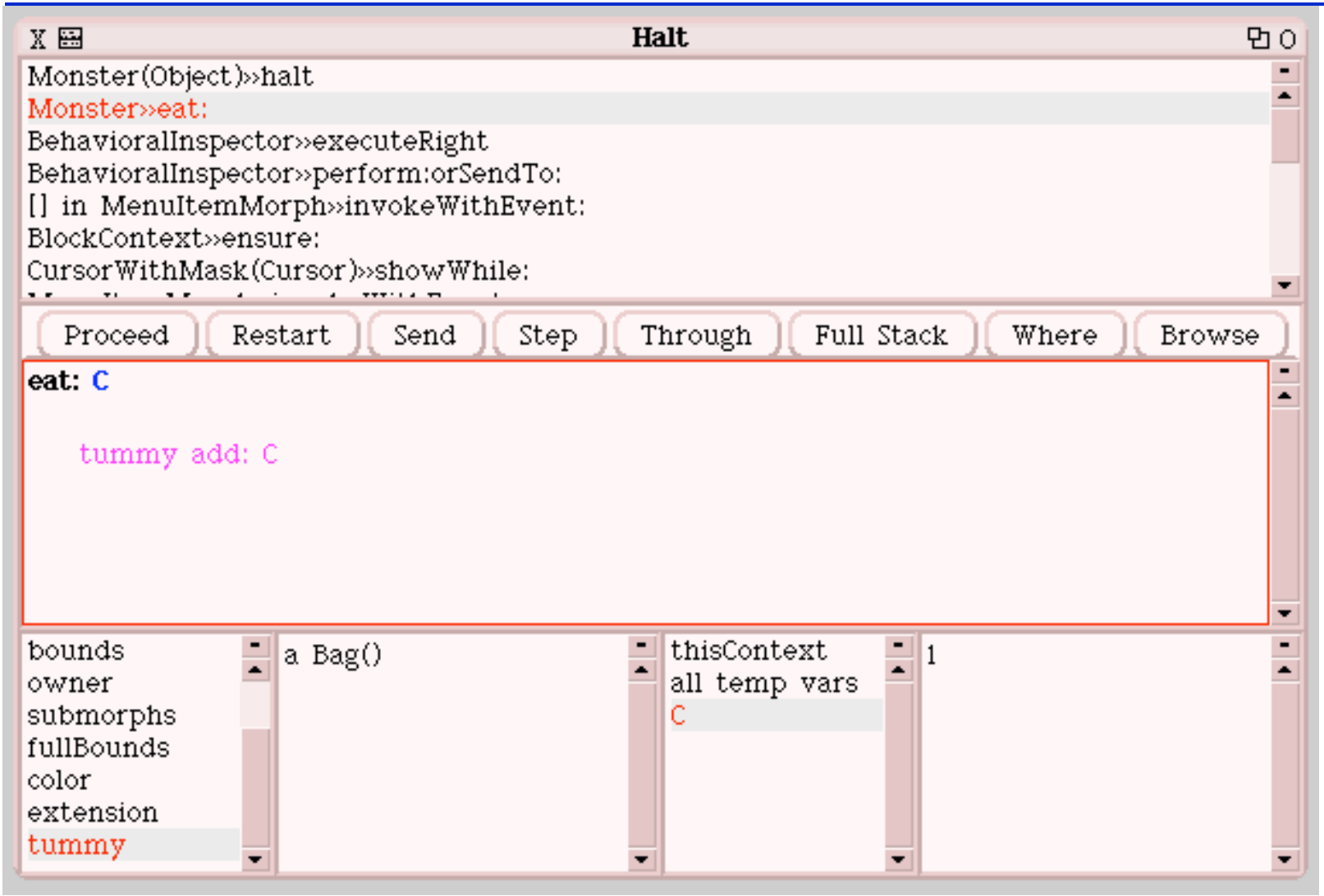
- Do not break encapsulation
- myObject behavioralInspect



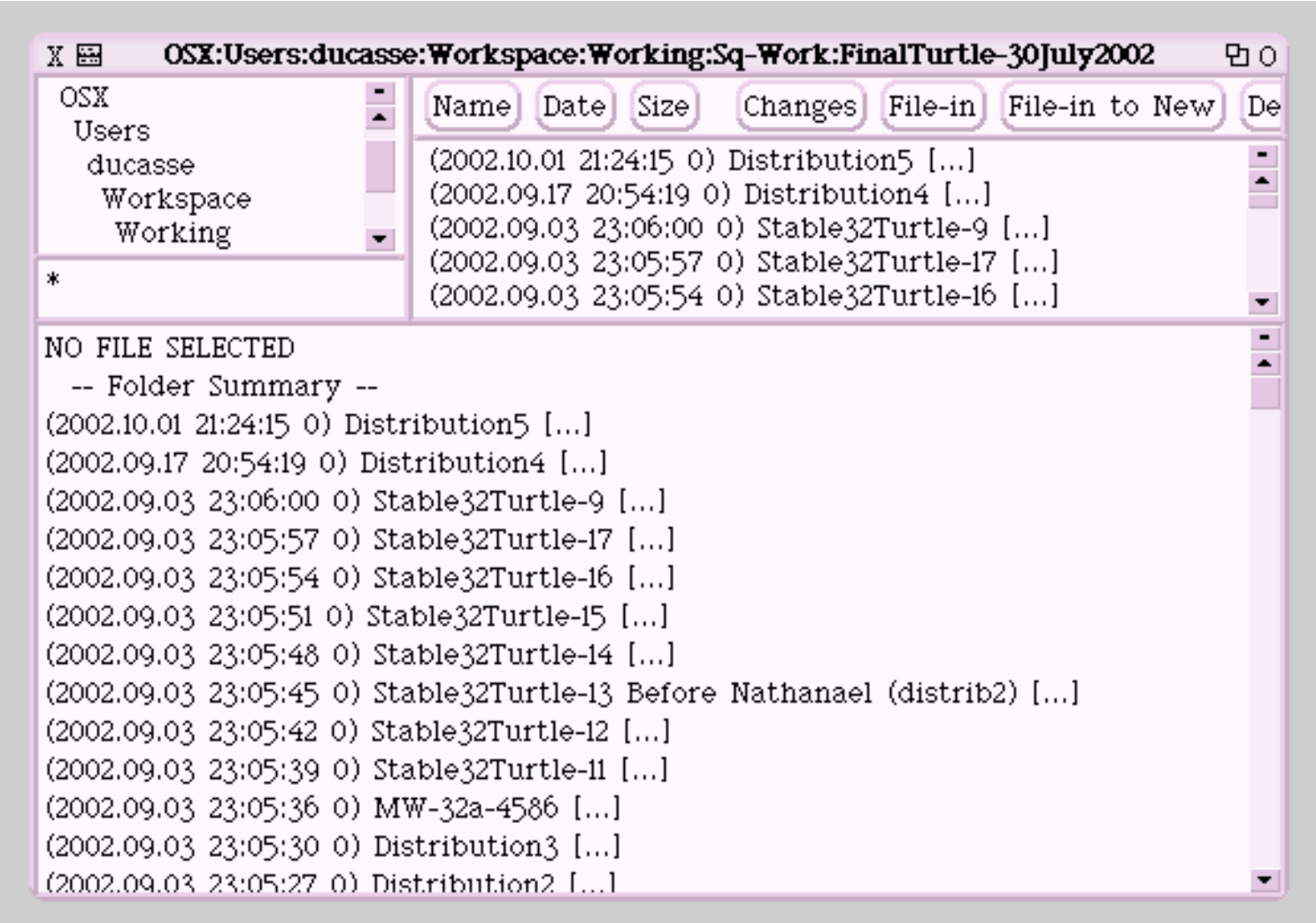
Debugger?


Halt
Proceed
Abandon
Debug
Monster(Object)»halt
Monster»eat:
BehavioralInspector»executeRight
BehavioralInspector»perform:orSendTo:
[] in MenuItemMorph»invokeWithEvent:
BlockContext»ensure:
CursorWithMask(Cursor)»showWhile:

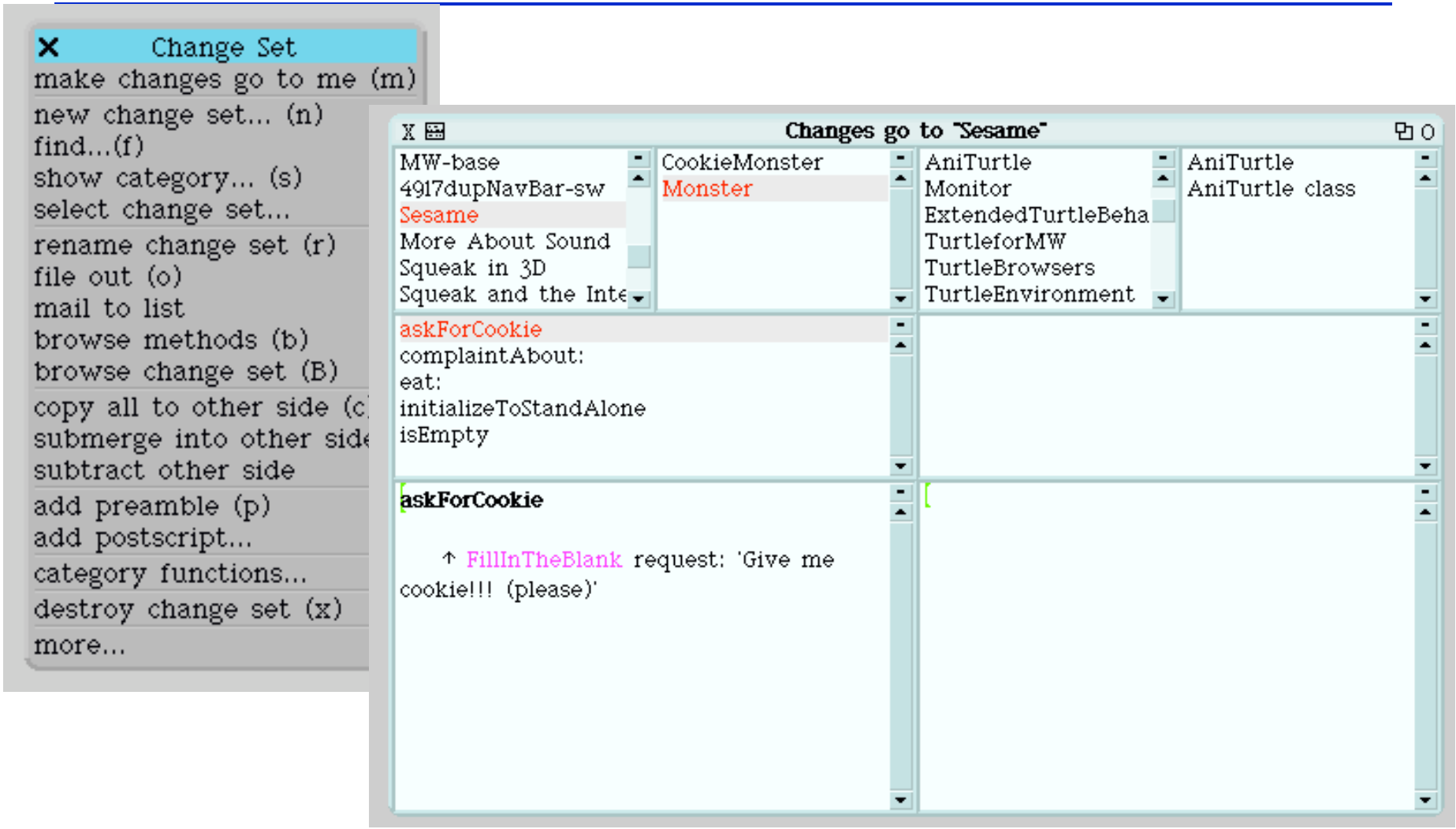
Debugger !!!


Halt
Monster(Object)>>halt
Monster>>eat:
BehavioralInspector>>executeRight
BehavioralInspector>>perform:orSendTo:
[] in MenuItemMorph>>invokeWithEvent:
BlockContext>>ensure:
CursorWithMask(Cursor)>>showWhile:
Proceed
Restart
Send
Step
Through
Full Stack
Where
Browse
eat: C
tummy add: C
bounds
owner
submorphs
fullBounds
color
extension
tummy
a Bag()
thisContext
all temp vars
C
1

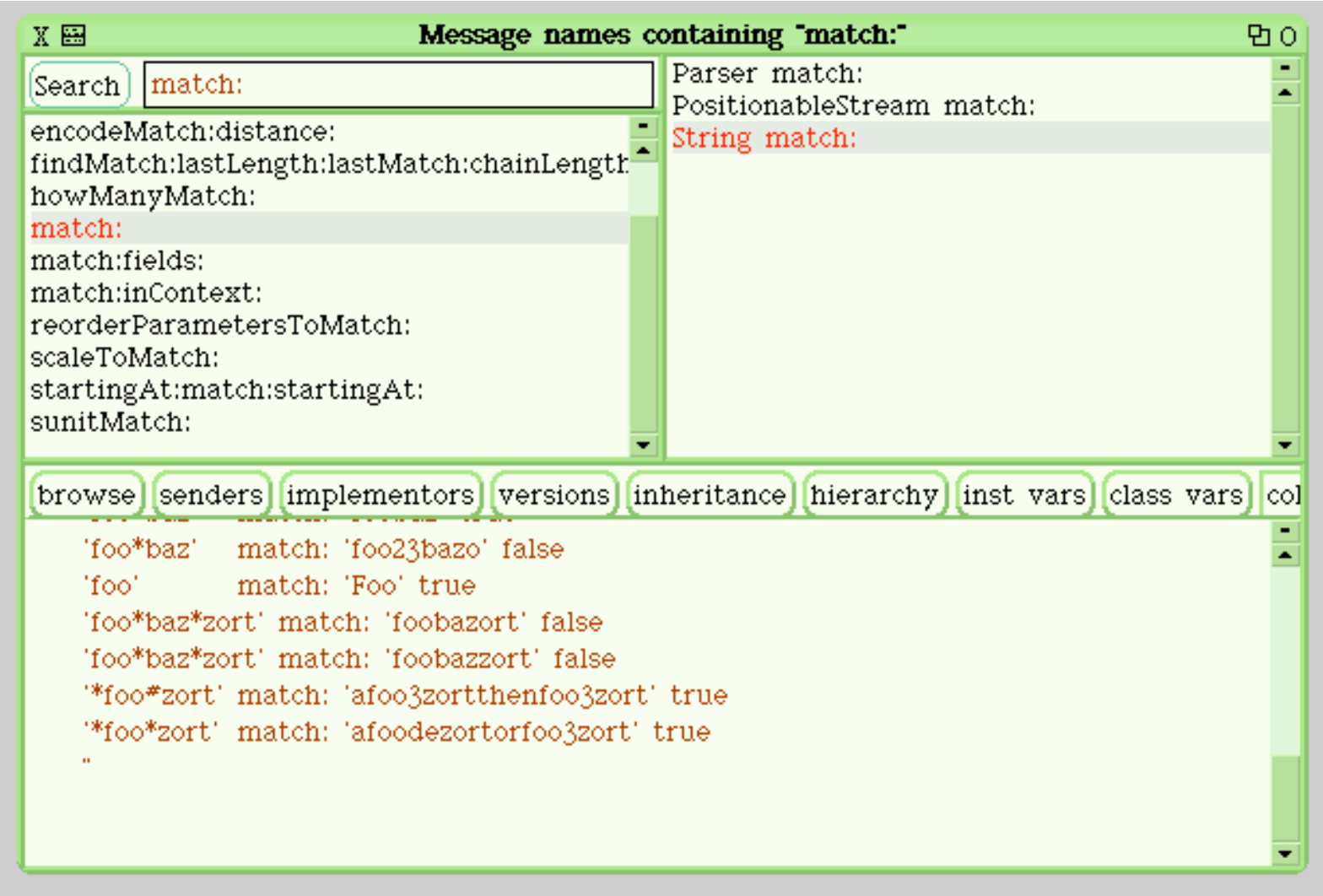
FileList

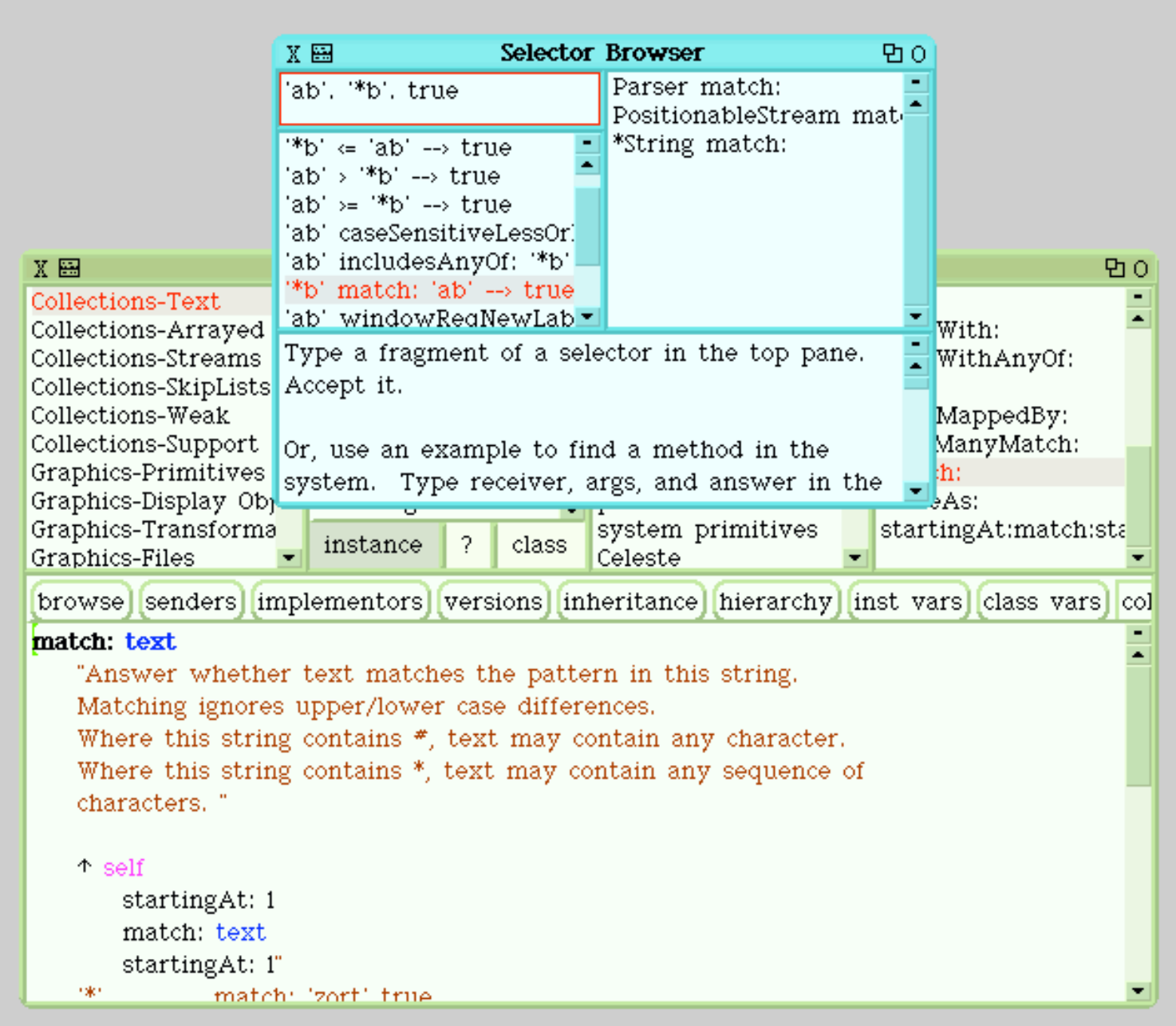

OSX:Users:ducasse:Workspace:Working:Sq-Work:FinalTurtle-30July2002
OSX
Users
ducasse
Workspace
Working
*
Name
Date
Size
Changes
File-in
File-in to New
De
(2002.10.01 21:24:15 0) Distribution5 [...]
(2002.09.17 20:54:19 0) Distribution4 [...]
(2002.09.03 23:06:00 0) Stable32Turtle-9 [...]
(2002.09.03 23:05:57 0) Stable32Turtle-17 [...]
(2002.09.03 23:05:54 0) Stable32Turtle-16 [...]
NO FILE SELECTED
-- Folder Summary --
(2002.10.01 21:24:15 0) Distribution5 [...]
(2002.09.17 20:54:19 0) Distribution4 [...]
(2002.09.03 23:06:00 0) Stable32Turtle-9 [...]
(2002.09.03 23:05:57 0) Stable32Turtle-17 [...]
(2002.09.03 23:05:54 0) Stable32Turtle-16 [...]
(2002.09.03 23:05:51 0) Stable32Turtle-15 [...]
(2002.09.03 23:05:48 0) Stable32Turtle-14 [...]
(2002.09.03 23:05:45 0) Stable32Turtle-13 Before Nathanael (distrib2) [...]
(2002.09.03 23:05:42 0) Stable32Turtle-12 [...]
(2002.09.03 23:05:39 0) Stable32Turtle-11 [...]
(2002.09.03 23:05:36 0) MW-32a-4586 [...]
(2002.09.03 23:05:30 0) Distribution3 [...]
(2002.09.03 23:05:27 0) Distribution2 [...]

ChangeSorter: to sort your changes

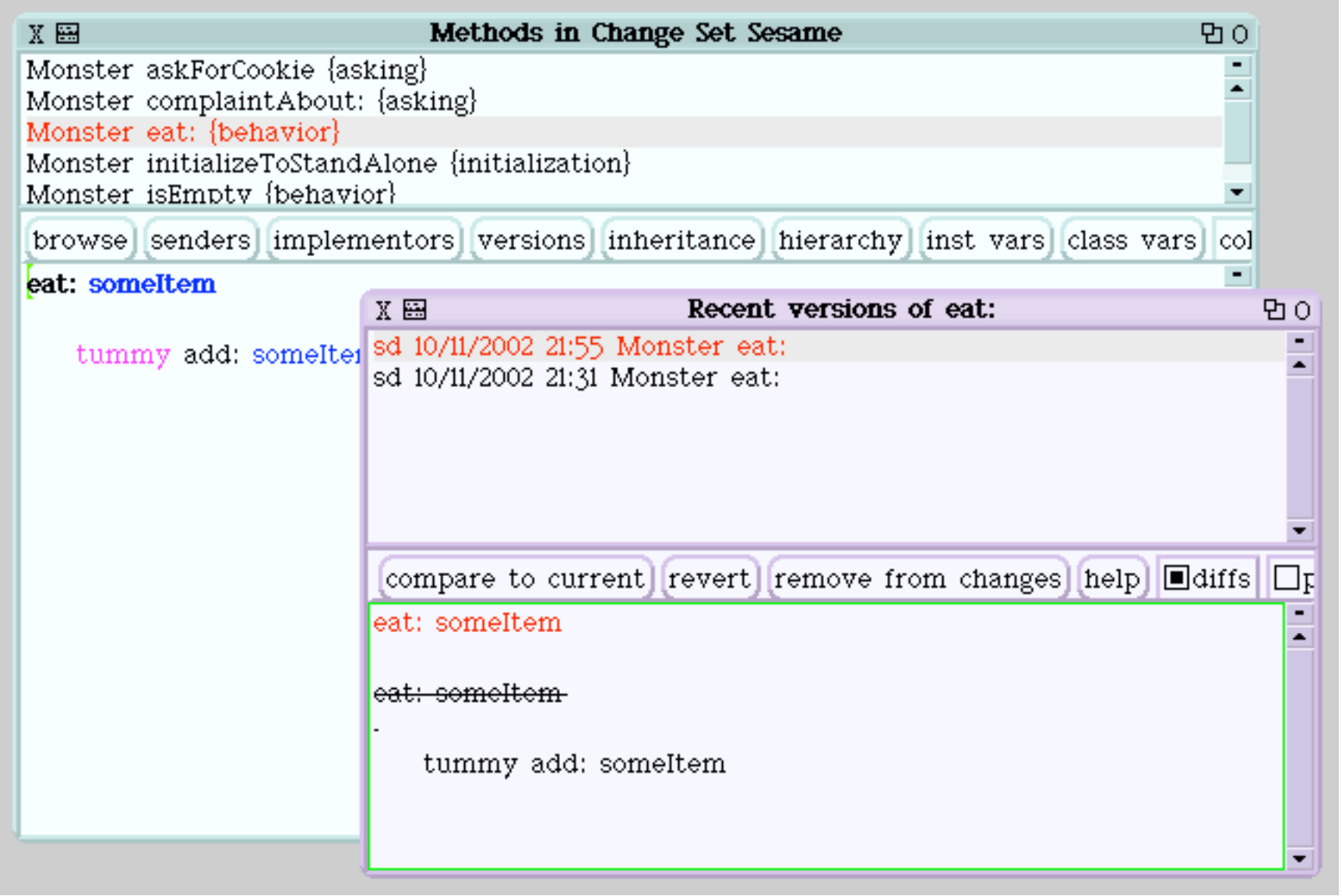


Message Names Finder

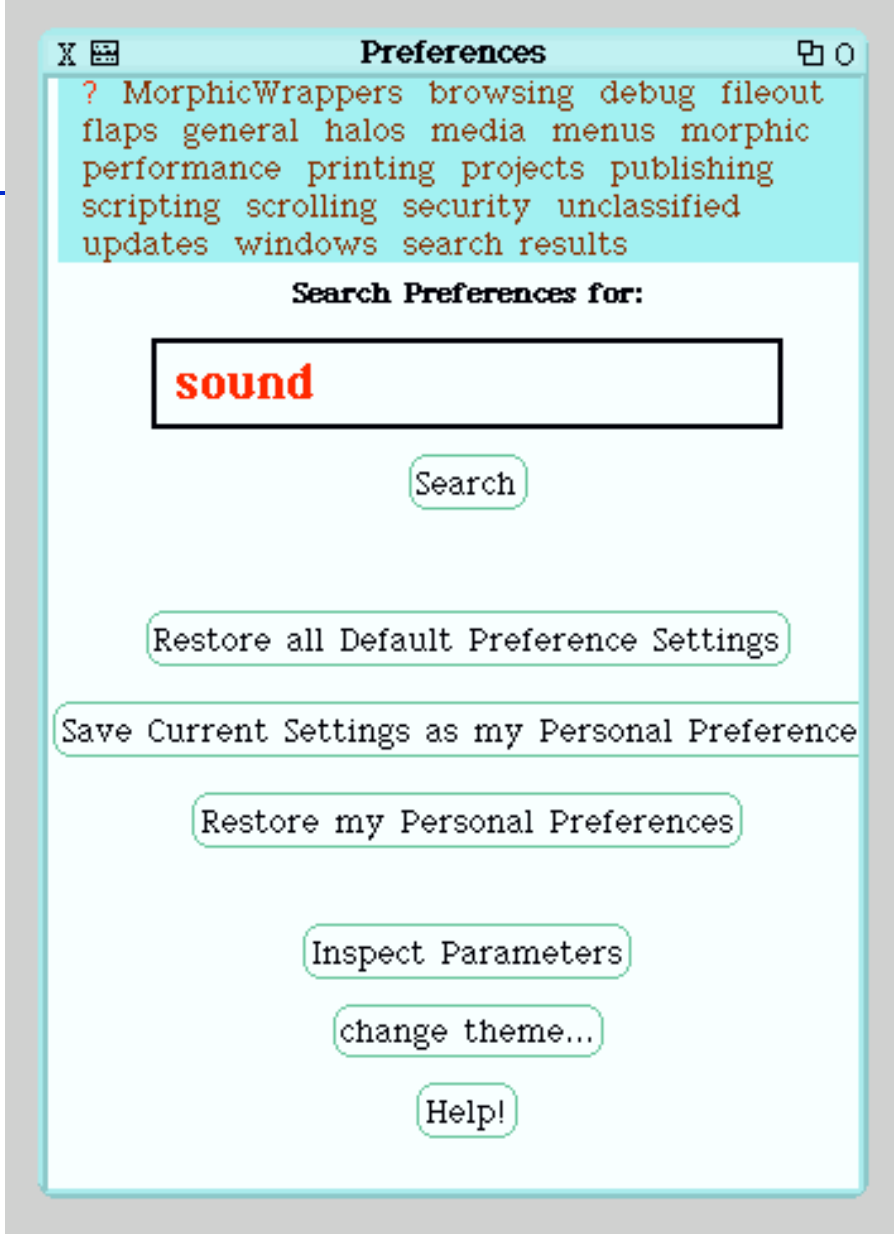



Selector Browser
'ab'. '*b'. true
Parser match:
PositionableStream mat
*String match:
'*b' <= 'ab' --> true
'ab' > '*b' --> true
'ab' >= '*b' --> true
'ab' caseSensitiveLessOr
'ab' includesAnyOf: '*b'
'*b' match: 'ab' --> true
'ab' windowReqNewLab
Type a fragment of a selector in the top pane.
Accept it.
Or, use an example to find a method in the system. Type receiver, args, and answer in the
Collections-Text
Collections-Arrayed
Collections-Streams
Collections-SkipLists
Collections-Weak
Collections-Support
Graphics-Primitives
Graphics-Display Obj
Graphics-Transforma
Graphics-Files
With:
WithAnyOf:
MappedBy:
ManyMatch:
h:
As:
instance
?
class
system primitives
Celeste
startingAt:match:sta
browse
senders
implementors
versions
inheritance
hierarchy
inst vars
class vars
col
match: text
"Answer whether text matches the pattern in this string.
Matching ignores upper/lower case differences.
Where this string contains #, text may contain any character.
Where this string contains *, text may contain any sequence of
characters. "
↑ self
startingAt: 1
match: text
startingAt: 1"
'*' match: 'zort' true

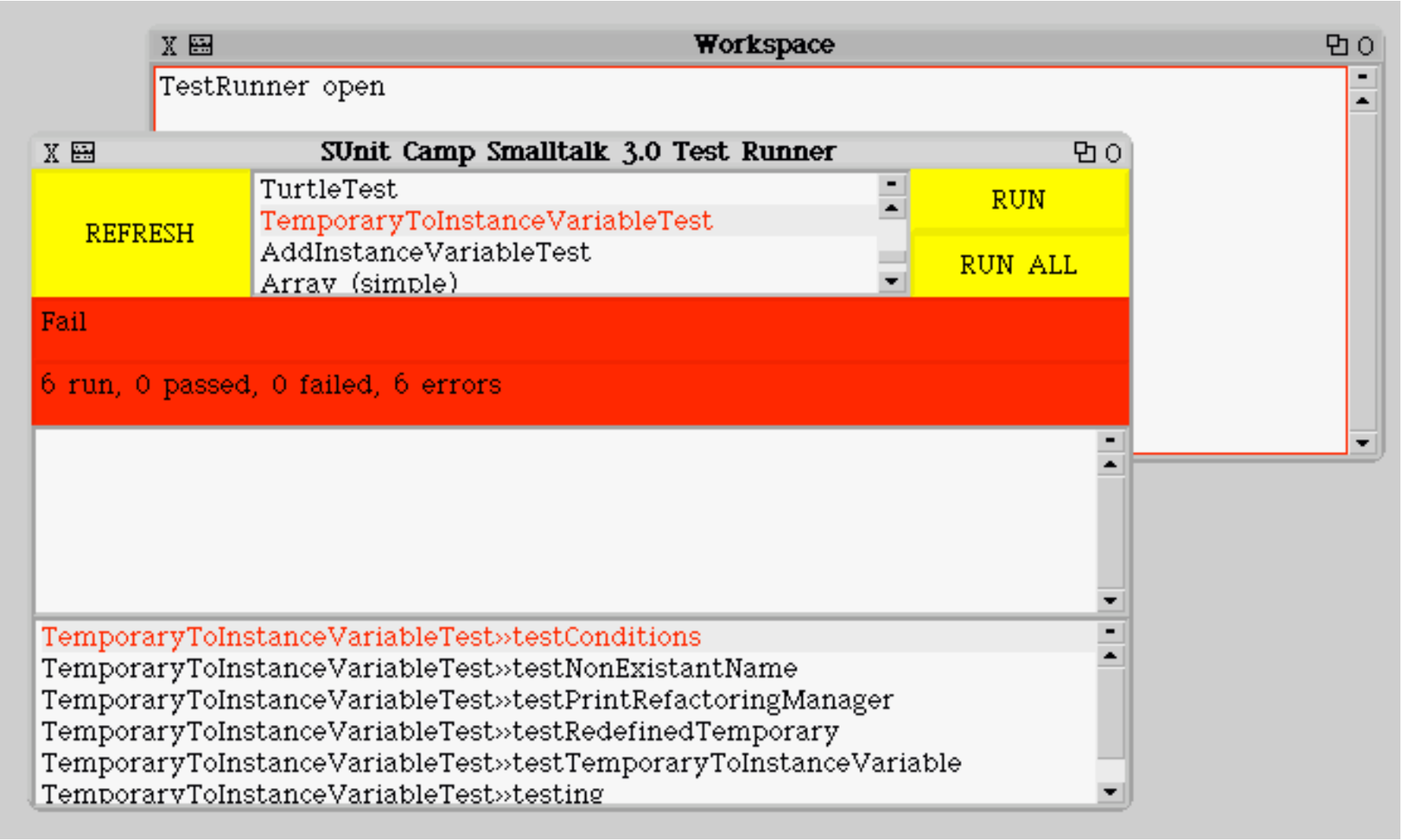
Methods in ChangeSets + Versions

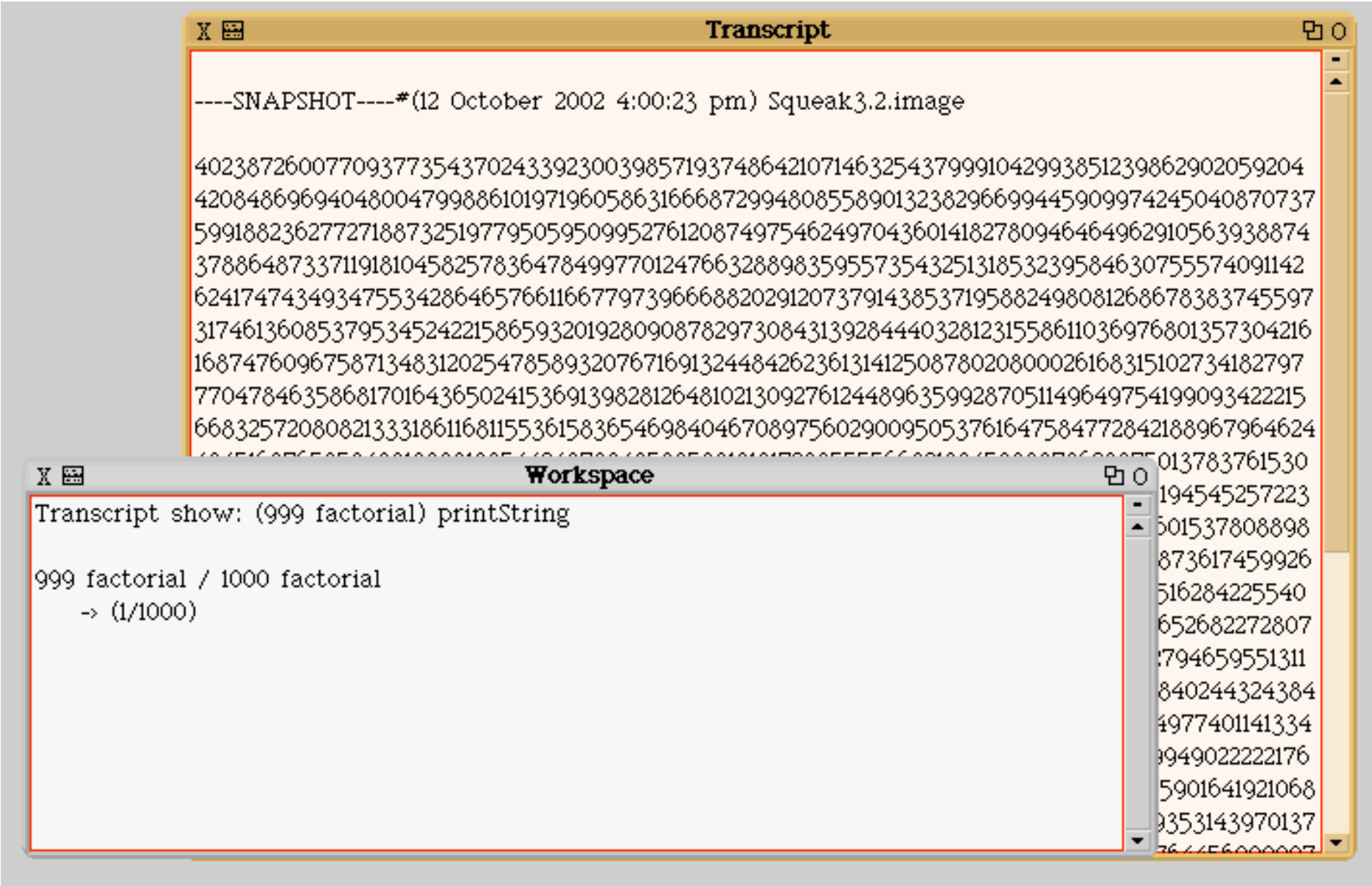


Preferences



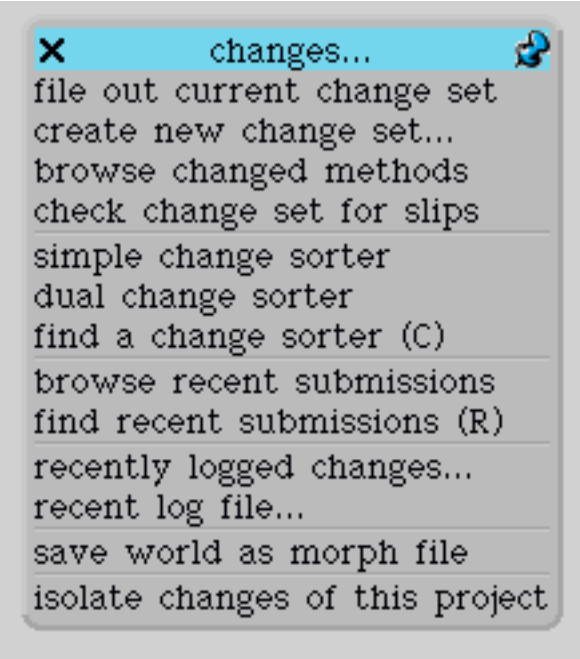
SUnit

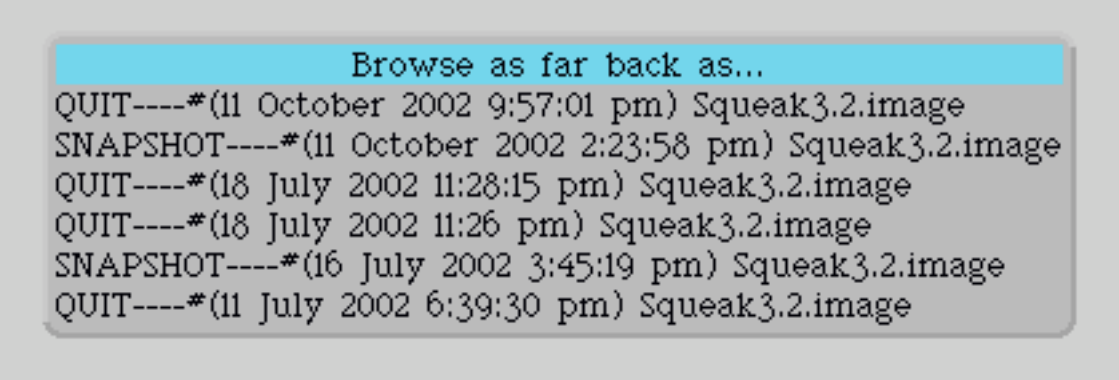

Workspace
TestRunner open
SUnit Camp Smalltalk 3.0 Test Runner
REFRESH
TurtleTest
TemporaryToInstanceVariableTest
AddInstanceVariableTest
Array (simple)
RUN
RUN ALL
Fail
6 run, 0 passed, 0 failed, 6 errors
TemporaryToInstanceVariableTest>>testConditions
TemporaryToInstanceVariableTest>>testNonExistantName
TemporaryToInstanceVariableTest>>testPrintRefactoringManager
TemporaryToInstanceVariableTest>>testRedefinedTemporary
TemporaryToInstanceVariableTest>>testTemporaryToInstanceVariable
TemporaryToInstanceVariableTest>>testing


Transcript
----SNAPSHOT----#(12 October 2002 4:00:23 pm) Squeak3.2.image
Workspace
Transcript show: (999 factorial) printString
999 factorial / 1000 factorial
-> (1/1000)

Changes Menu...Recently logged files

- Everything you do is recorded





Change your Mind

- Everything you do is recorded !!
- So try and learn how to recover your code

- You are smart so
  - Experiment,
  - learn for you, browse,
  - be aggressive, ***all*** the code is there