A Few Remarks About Debugging in R

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October 13, 2009

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  - I like to use the same text editor for everything I do.

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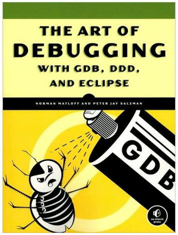
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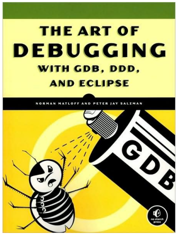
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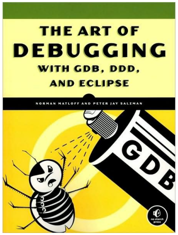
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- I thus am delighted that REvolution Computing is stepping into the void. I hope they or others go to open source/cross platform.

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  (Mark just informed me today he's preparing an update to the package.)

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- Ability to debug parallel code (next slide).

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- Many existing parallel R platforms make parallel debugging very difficult, due to lack of terminals for the processes. (One of my Rdsm modes allows it.)

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    - Start small: Try the program on a small vector, maybe in with a scaled-down version of the program itself.
    - Top-down approach: When debugging **f()** which calls **g()**, don’t follow calls to **g()** at first. Check first whether the return value of **g()** is correct.
    - Use binary search: Say you have a syntax error that’s baffling you. Comment-out half the code of the function, to see if the error disappears. Then comment-out half of the half that triggers the error, etc.

Tips (cont'd.)

- Have a boolean global variable, say **dbg**, that turns debugging on and off, and then insert breakpoints with something like

```
if (dbg) browser()
```

- My aforementioned kludge may help you organize better, e.g. keep track of your breakpoints. Download from `http://heather.cs.ucdavis.edu/DebugKludge.r`.
- If you are using a terminal-less parallel R package and are forced to use print statements in lieu of a debugging tool, use **message()** instead of **print()**. (The latter may not actually print.)