Your First Model

EES 4760/5760

Agent-Based & Individual-Based Computational Modeling

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Class #5: Tues. January 23 2017

Homework:

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- Let’s talk about ODD exercise.

Writing a model from an ODD

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- Questions about writing a model from Butterfly ODD?

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- Were there things the ODD was unclear about?

Enhancing the Butterfly model

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patches-own
[
  elevation
  visited? ; question mark means it's a true/false variable
]

to setup
[
  ...
  ask patches [
    set visited? false
    ...
    ]
  ...
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- Stop butterfly from moving if it’s at the top of a hill.

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- Put a slider for *q*
- Add patches-own variable to indicate whether it was visited.
- Add turtles-own variable to remember the patch where it started.
- Increase the number of butterflies to 50.
- Stop butterfly from moving if it’s at the top of a hill.
  - How can you tell whether it’s on the top?

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  - Put an **observer** on the interface
  - Define a reporter:

```
to-report corridor-width
  let wid ... ; calculate corridor width
  report wid
end
```

Running Experiments: BehaviorSpace

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- Writes output to `.csv` spreadsheet file (table output is the most useful).

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- Writes output to `.csv` spreadsheet file (table output is the most useful).
- Note: Data written in spreadsheet might be out of order.

```
"BehaviorSpace results (NetLogo 5.3.1)"
"jg_butterfly_1.nlogo"
"vary-q"
"01/25/2016 23:08:47:963 -0600"
"min-pxcor","max-pxcor","min-pycor","max-pycor"
"0","149","0","149"
"[run number]","q","[step]","corridor-width"
"4","0","999","424.71585264477375"
"3","0","999","407.8948972331853"
"2","0","999","402.16008464319225"
"1","0","999","413.09183879201066"
"5","0","999","380.4175502215263"
"6","0","999","408.25117143183326"
"7","0","999","431.37461560574894"
"8","0","999","408.38259535508286"
"9","0","999","421.7254402334981"
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```
library(analyzeBehaviorspace)
launch_abs()
```

Emergence