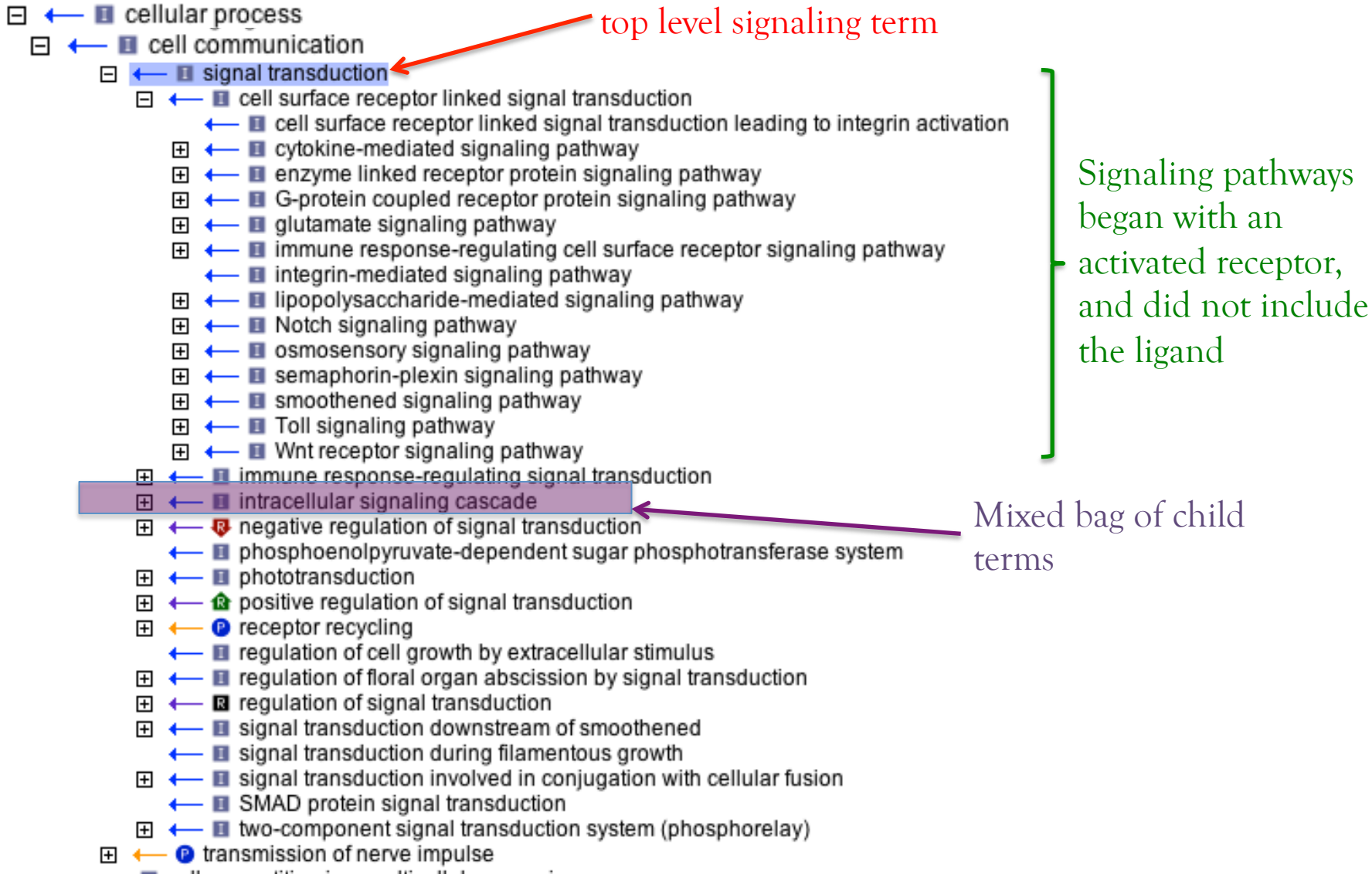
A BRIEF HISTORY OF SIGNALING IN GO

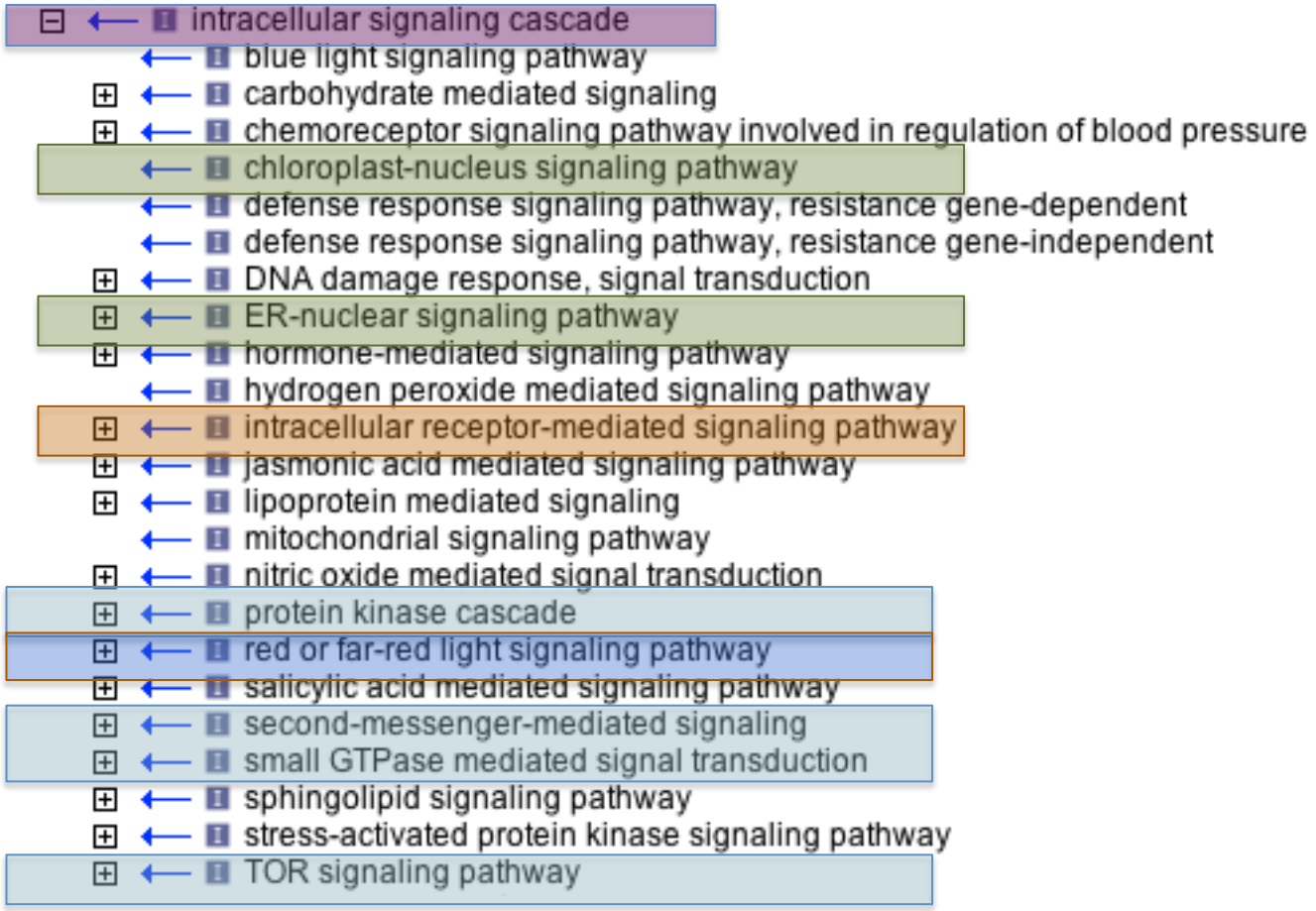
(June 2011)

How it looked before the signaling overhaul

(pre-January 2010 when Jen committed the large changes)



Intracellular signaling.. a mixed bag



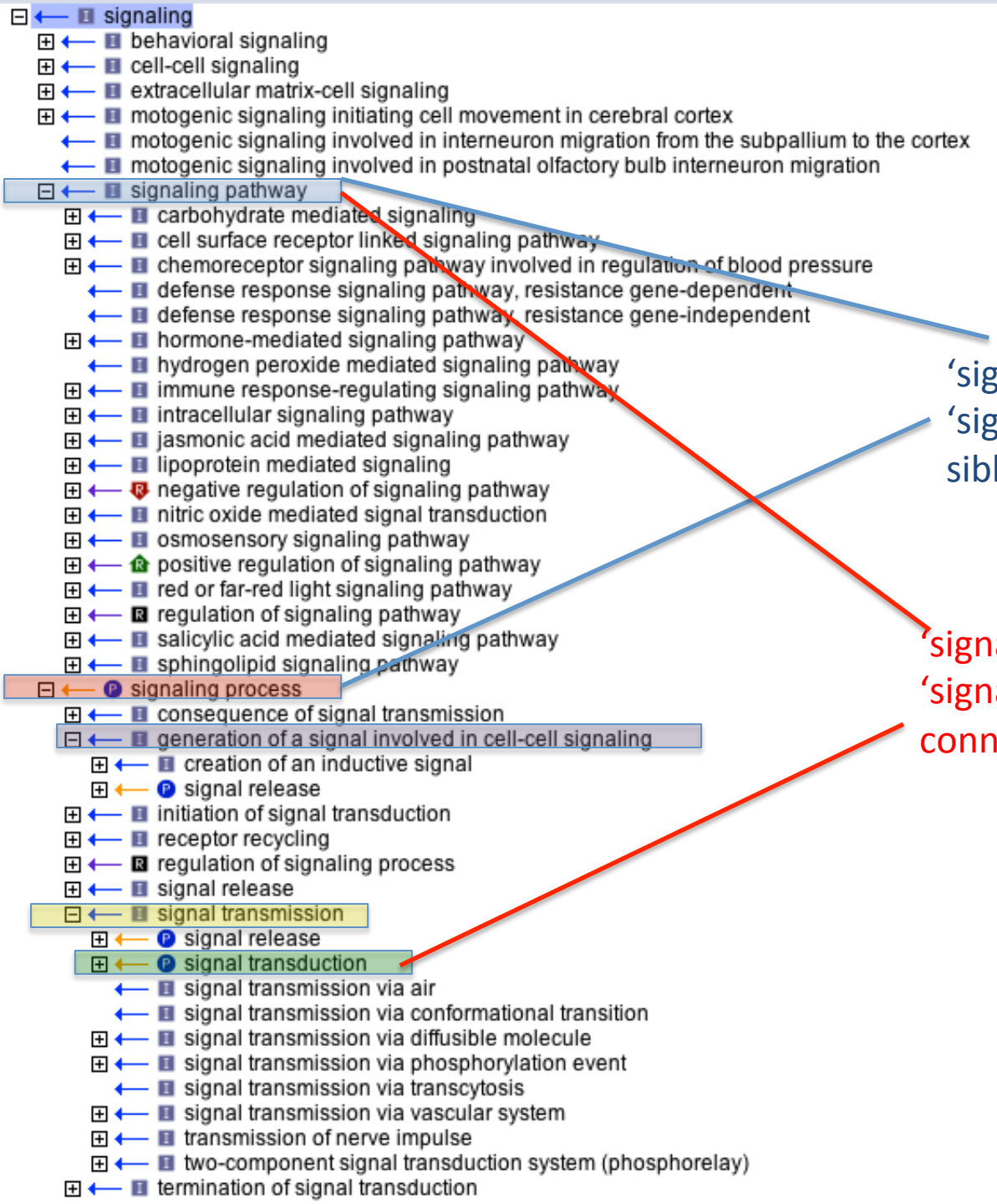
PHASE I: SPLIT INTO PROCESS AND PATHWAYS

In Phase I of the signaling overhaul, a generic 'signaling ; GO: 0023052' term was created and the node was split into:

- **signaling pathways**: *the series of GPs that transduce a signal*
- **signaling processes**: *the inidividual steps of signaling*

[These changes were committed at the start of 2010, just before Jen left for maternity leave]

Pathway/Process Split



'signaling pathway' & 'signaling process' are siblings

'signaling pathway' and 'signal transduction' aren't connected

PROCESS/PATHWAY SPLIT

At the September 2010 GOC meeting (Bar Harbor), Becky gave a presentation on the signaling overhaul. It became clear that splitting the signaling node into pathways and processes was problematic for a number of reasons:

1. Annotators had to make a high-level decision about whether to annotate to a pathway or a process term, as they were unconnected in the arrangement.

2. All pathways are processes (the term is under biological_process).

3. Pathways are an 'artificial' set of gene products that act together.

AUTUMN 2010

After the September 2010 GOC meeting (Bar Harbor), it was decided to remove the pathway/process split in signaling. The major edits were:

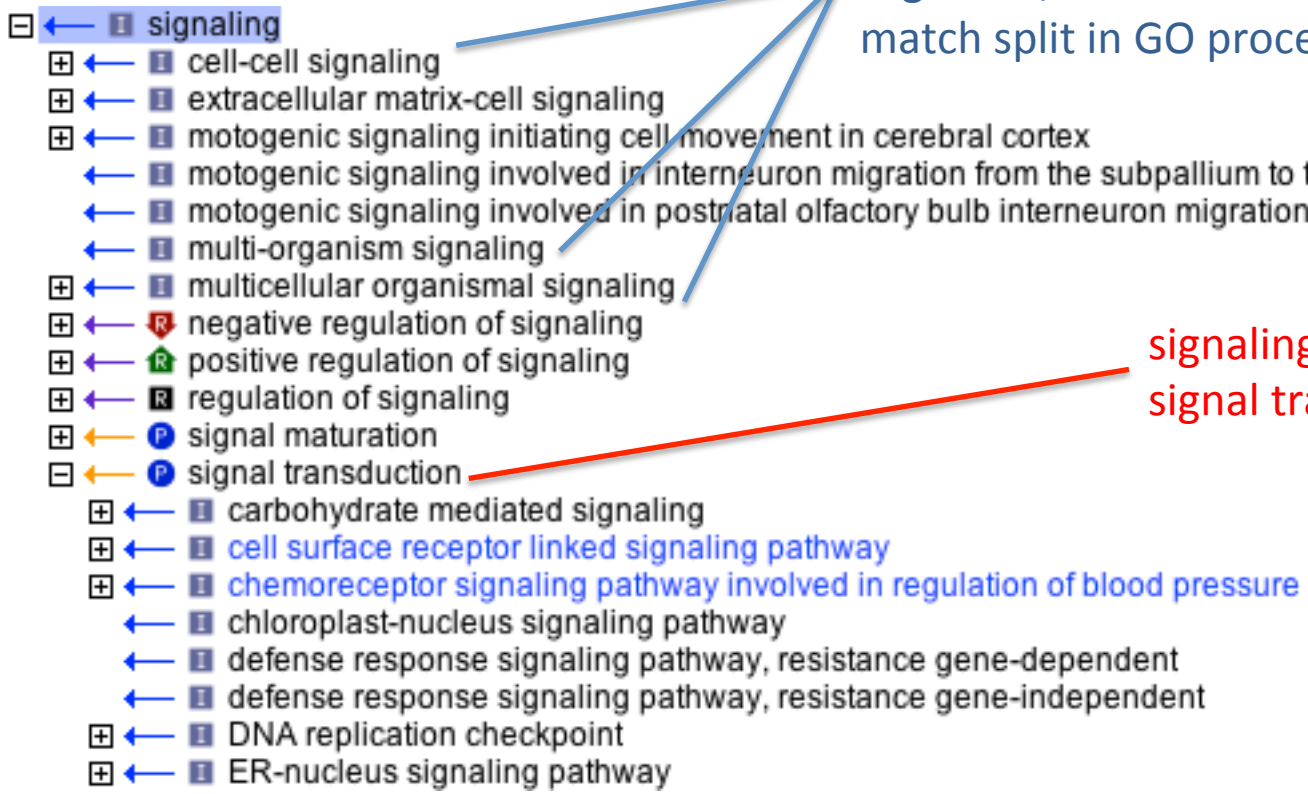
1. All pathways were moved back under 'signal transduction'.

2. Pathways were agreed to begin with a ligand activating a receptor. Therefore, the ligand is part of the signaling pathway (and can be annotated to 'signal transduction).

3. There is no generic 'signaling pathway' term (this is essentially: signal transduction'.

4. The signaling node was split into:
   - cell-cell signaling ; GO:0007267
   - multicellular organismal signaling ; GO:0035637
   - multi-organism signaling ; GO:0035636

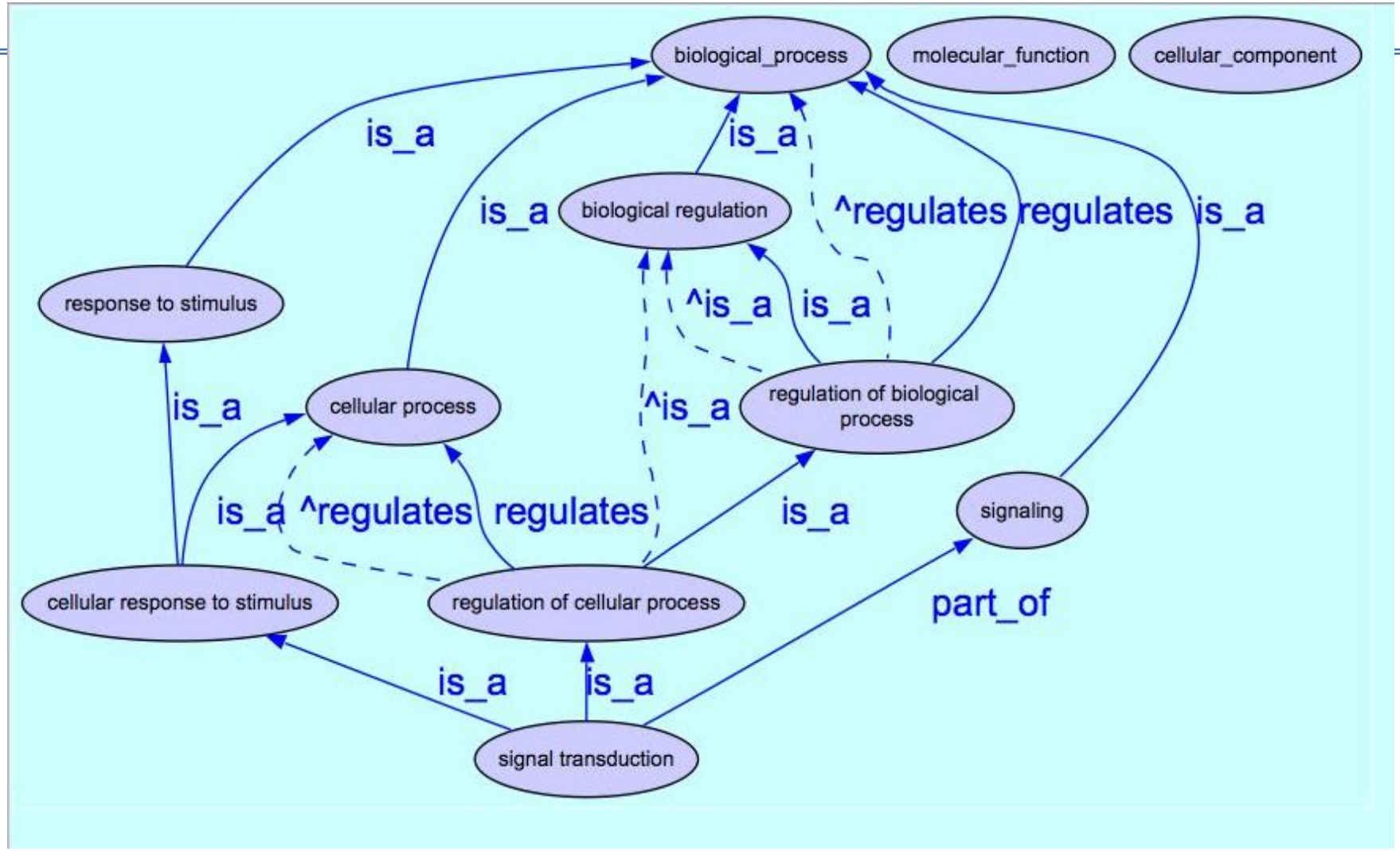
January 2011



Split into multi-organism, multicellular organism, and cellular signaling (to match split in GO process).

signaling pathways under signal transduction.

…simplified to aid more consistent annotation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