Editorial Review: Smith

Thanks for your submission, presenting results on informational analysis of the mammalian cortical development network. Both reviewers and the editor were enthusiastic about your submission. Before proceeding with publication, please address comments by the two reviewers, as well as the editorial feedback below.

* Both reviewers requested more detailed discussion on the control nodes. Please address their comments. Additionally, it is worth considering highlighting control kernel nodes in your figures. It is unclear from much of the discussion whether the control nodes are playing a role in the information processing and storage of the network or not – a discussion of the relevancy between the control analysis and the information theoretic analysis would provide more integration of the main ideas of the manuscript.
* It seems that some nodes overlap in the sets defined by the two different sense of control introduced. These should be highlighted in the text and discussed. Does type I or type II control differ relative to informational structure?
* It would be much easier to read if lists of states or control nodes were included as Tables instead of starred lists.
* Some speculation on why there is no transfer entropy to/from control nodes on the biological trajectory would be of interest to the reader. This might also help explicate Fig. 3, although I am not sure this is correct. By your Fig. 4 it seems that there is TE among control nodes (see comment below).
* Line 97 – likely you mean “states” rather than “nodes”
* Fig. 4 – can you highlight the control kernel nodes on each axis? Also, what is the significance of the left-hand panel of the figure? Why are you averaging AI for two nodes? There is no discussion of this measure and it does not seem intuitive based on the definition of AI (whereas for TE your x and y axis on the heat map make some sense). What are the functions of the nodes with high TE? It seems that some of the nodes involved in TE in the biological trajectory (and the fuller state space) are control kernel nodes, but this contradicts a statement made in the text. So I am confused. Highlighting those nodes will greatly help the discussion of this figure.
* Also line 80 and 85 have the same list for the control kernel nodes, perhaps this is part of the confusion.