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## Re: Resources for RSA analyses

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**From:** Billy Mitchell <billy.mitchell@temple.edu>  
**Date:** Wed 9/24/2025 11:51 PM  
**To:** Daniel Zweben <daniel.zweben@temple.edu>

Hey sorry for the long wait, yeah that should probably work as long as you don't mind me zooming in

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**From:** Daniel Zweben <daniel.zweben@temple.edu>  
**Sent:** Tuesday, September 23, 2025 4:36:42 PM  
**To:** Billy Mitchell <billy.mitchell@temple.edu>  
**Subject:** Re: Resources for RSA analyses

Got it! Thanks so much anyway! it didn't work out for Chelsea and co either We have another weekly meeting next Tuesday at 10am. Would this time work by any chance?

If not - Johanna and I will probably just said aside time for a separate meeting for this and I'll reach out to coordinate that instead. Thanks SO much again for your help with this!

Best  
Danny

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**From:** Billy Mitchell <billy.mitchell@temple.edu>  
**Sent:** Monday, September 22, 2025 12:15:38 PM  
**To:** Daniel Zweben <daniel.zweben@temple.edu>  
**Subject:** Re: Resources for RSA analyses

Hey Danny,

Thanks so much for the invite! Unfortunately, I have another meeting from 12pm - 2pm. If Chelsea can't join, you can try Melanie. Also, would be happy to meet before or after to talk through some ideas with you if that'd be helpful!

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**From:** Daniel Zweben <daniel.zweben@temple.edu>  
**Sent:** Monday, September 22, 2025 10:30 AM  
**To:** Billy Mitchell <billy.mitchell@temple.edu>  
**Subject:** Re: Resources for RSA analyses

Hi Billy,

This Friday at 12pm we're presenting our task at lab meeting to brainstorm RSA analysis ideas. We're hoping someone with RSA experience could join to give ideas on where it might be most useful.

We're waiting to hear if Chelsea is available, but I thought I'd ask if you might be up for it. I totally understand if not, and that this is us asking you to go out of your own way, but just thought I'd float the idea to you.

Thanks again for your help thus far!

Danny

**From:** Billy Mitchell <billy.mitchell@temple.edu>  
**Sent:** Friday, September 12, 2025 7:14:50 PM  
**To:** Daniel Zweben <daniel.zweben@temple.edu>  
**Subject:** Re: Resources for RSA analyses

No worries; luckily, because of the baby, I'm only at Rutgers on Mondays and every other Wednesday and I took a paid job with TUGSA for this year, so I'm on campus all the time still (and frequently working in Chelsea's lab). If you need anything, don't hesitate to ask!

**From:** Daniel Zweben <daniel.zweben@temple.edu>  
**Sent:** Friday, September 12, 2025 4:25 PM  
**To:** Billy Mitchell <billy.mitchell@temple.edu>  
**Subject:** Re: Resources for RSA analyses

Hi Billy,

Firstly, I didn't realize you were already at your PostDoc. Congrats!

Wow - thank you so much, this is extremely helpful! The base R code is great since I can probably adapt it into tidyverse pretty easily, and I really appreciate the dartbrain notebook (big Python fan :D).

It's reassuring to know I'm on the right track as long as there's variation around a core principle across which to compare activation maps. I definitely have a project with conditions manipulating the same concept in ways that seem sufficient for comparison. My main issue (a good one to have) is that Johanna's tasks vary across 4–5 concepts simultaneously (peer feedback, feedback prediction, recall, prediction error, different peers, etc.), so my main task right now is digging into the guts of both the task and RSA to figure out which comparison to analyze.

All that to say, if I have follow-ups or specific questions based on my goals, that will probably come later down the line. I really appreciate your willingness to help. These resources are such a big help in getting started!

Best,  
 Danny

### **Danny Zweben**

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 Temple University  
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 Lab Website: <https://www.sdnlaboratory.com>

Lab Website: <https://sites.temple.edu/caadc/>

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**From:** Billy Mitchell <billy.mitchell@temple.edu>  
**Sent:** Friday, September 12, 2025 3:31 PM  
**To:** Daniel Zweben <daniel.zweben@temple.edu>  
**Subject:** Re: Resources for RSA analyses

Hey Danny,

Thanks for reaching out. Hope your first year is going well! Yeah, I've ran a few; albeit none very recently. I helped Melanie run one recently and she might be a better resource for the current state of things. There are no explicit RSA packages to my knowledge, but the good news is that you don't really need any. I did [my whole original project](#) in base R. It's very bad code (it's the project I first learned how to code on, so that repo isn't actually very helpful [and I also did a slight variation on the typical RSA pipeline, too]), but you could do the exact same thing in tidyverse in probably < 50 lines of code.

[Haroon's RSA paper](#) is a great place to start for theory if you did want any additional support. Luckily, I think RSA is much harder to wrap your mind around conceptually than it is to execute. Once you get that, it's just correlations on top of correlations on top of correlations. For practical details, the [daribrain notebook](#) is pretty good and is in python, if that were to be your preferred language.

RSA can also be used with almost any type of data - what really seems to matter is that you have variation around a core target concept. For example, [we had kids watch videos that were either sad or happy](#). All of the other details - the characters, color schemes, video lengths, etc. - varied around those concepts, but what each had in common was those emotions. Then, we could compute the representational similarity for these core concepts. That's not necessarily the language you'd want to use if you were writing it up, but that's more or less how I think of the underlying strength.

Happy to meet on zoom or on campus to give you some more specific direction if that'd be helpful. I could probably be a bit more helpful if I had a narrowed idea of what you're trying to do. I'm pretty sure I ran an RSA somewhat recently in a few lines - I'll see if I can find that and send it to you if I do. Good luck!

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**From:** Daniel Zweben <daniel.zweben@temple.edu>  
**Sent:** Friday, September 12, 2025 2:17 PM  
**To:** Billy Mitchell <billy.mitchell@temple.edu>  
**Subject:** Resources for RSA analyses

Hi Billy,

I hope you're doing well. I'm reaching out because I may be doing RSA analyses as my first-year project with Johanna, and I word on the street is that you've done RSA work in the SAN lab. I have a good grasp of the broad overview of the method, but I'd like to learn more about the details, how the analyses are actually run, what packages are typically used, and what kinds of protocols make a good fit for RSA.

Do you happen to have a GitHub or a reference paper/manuscript you'd recommend for getting started? Or, if there are resources or GitHub pages that were especially helpful to you, I'd be grateful for any pointers!

Thanks so much!

Best,  
Danny

**Danny Zweben**

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