The article is well-written and targets an interesting and relevant issue. The researchers aim to investigate RMdependency and AMdependency of the SNARC effect. I think that this work is a positive example of a well-designed study where a lot of considerations were made, starting with the optimal number of trials per cell and power calculations. Further, also the planned data analysis is well described with useful measurements to improve the quality of the statistical analysis. Overall, I have just some minor suggestions to further improve this work.

p.7

“In that study, the observed result pattern looked like Scenario 5 in Figure 1”.

Figure 1 is too far away from this claim. I suggest either introducing the figure earlier or not referring to it at this stage.

p.7

The content of footnote 1 would be better in the main text together with the previous explanation on how to calculate the SNRAC effect.

p. 10/11

Scenarios are very hard to understand, even though they are illustrated in Figure 1. One needs to scroll up and down a lot. Maybe you could divide the figure into parts and explain each of the scenarios and then directly show the figure.

p. 12

“namely 0 to 5 and 4 to 9 in Experiment 1, and 1 to 5 (excluding 3) and 4 to 8 (excluding 6) in Experiment 2”

Which study are you referring to?

p. 16

I do understand your design approach and I think that the two experiments are well elaborated. Nonetheless, I do not understand the content of Table 2. What do you mean by “Parity +0.5”/”Parity -0.5”?

p.17

Why not visualize the time course of the stimuli presentation with a Figure?

p. 18

“This figure shows the four between-subjects conditions”

Why don’t you want to use a fully within-subject design?

p. 18

“handedness, and finger-counting habits”

How will these be measured?

p. 18

“Participants may choose response keys for the experimental task which are to be located in the same row and about one hand width apart from each other on their keyboard”

Even if the keys are one hand width apart from each other, how do you make sure that participants do not use just one hand for giving their responses?

p. 19

“Only trials with RTs between 200 and 1500 ms will be included in the analysis. Further outliers will be removed in an iterative trimming procedure for each participant separately, such that only RTs that are maximum 3 SDs above or below the individual mean RT of all remaining trials will be considered. Finally, only datasets of participants with at least 75% valid remaining trials and without any empty experimental cell (number magnitude per response side) in both number ranges will be considered.”

Please specify how and why you selected these criteria. Such data trimming criteria are often similar in the literature but not entirely equal. Thus, I would like to learn about your justification for using these criteria.