

Below zero? Processing of negative numbers

Below zero? Universal distance effect and situated space and size associations in negative numbers

Appendix II: Mean reaction times with individual slopes and trendlines

Jeglinski-Mende, M. A.^{1*}, Fischer, M. H.¹, & Miklashevsky, A.¹

¹ Division of Cognitive Sciences, Department of Psychology, University of Potsdam, Potsdam, Germany

*corresponding author:

Melinda A. Jeglinski-Mende

Department of Psychology, Division of Cognitive Sciences

University of Potsdam

Karl-Liebknecht-Strasse 24 House 14

D-14476 Potsdam OT Golm

Germany

Email: melinda.a.jeglinski@gmail.com

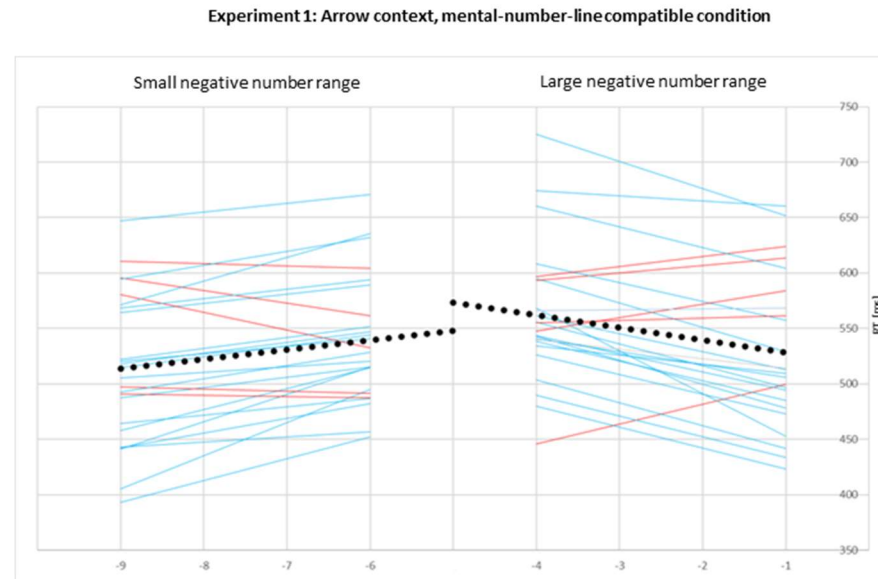


Figure 1. Individual slopes and mean slopes when classifying negative numbers relative to -5. Slopes were calculated to reflect the numerical distance effect: Numbers that are closer to the target number were expected to be responded to slower than numbers that are farther away from the target number. Individual slopes in blue color reflect this assumption, slopes in red color do not. The black dashed lines show mean slopes over all participants. This figure shows results for experiment 1, where numbers were displayed together with spatially oriented objects, i.e., left- and right- pointing arrows, when negative numbers (-9, -8, -7, -6, -4, -3, -2, -1) were displayed together with positive distractor numbers (+6, +7, +8, +9) and in the mental-number-line compatible condition.

Experiment 1: Arrow context, mental-number-line incompatible condition

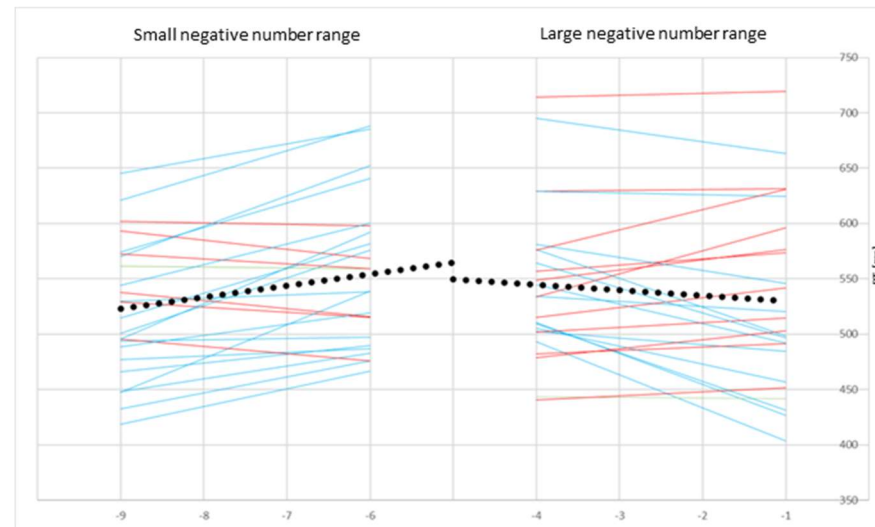


Figure 2. Individual slopes and mean slopes when classifying negative numbers relative to -5. Slopes were calculated to reflect the numerical distance effect: Numbers that are closer to the target number were expected to be responded to slower than numbers that are farther away from the target number. Individual slopes in blue color reflect this assumption, slopes in red color do not. The black dashed lines show mean slopes over all participants. This figure shows results for experiment 1, where numbers were displayed together with spatially oriented objects, i.e., left- and right- pointing arrows, when negative numbers (-9, -8, -7, -6, -4, -3, -2, -1) were displayed together with positive distractor numbers (+6, +7, +8, +9) and in the mental-number-line incompatible condition.

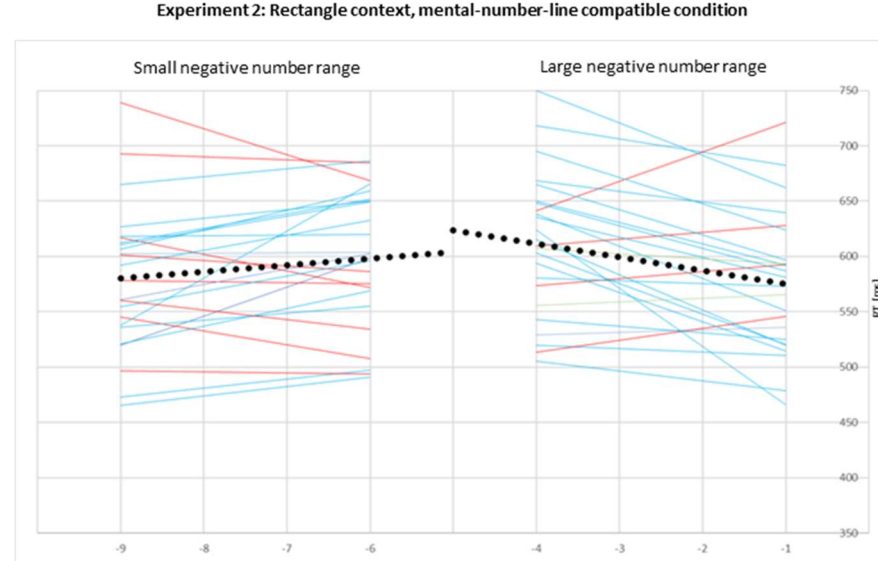


Figure 3. Individual slopes and mean slopes when classifying negative numbers relative to -5. Slopes were calculated to reflect the numerical distance effect: Numbers that are closer to the target number were expected to be responded to slower than numbers that are farther away from the target number. Individual slopes in blue color reflect this assumption, slopes in red color do not. The black dashed lines show mean slopes over all participants. This figure shows results for experiment 1, where numbers were displayed together with objects of varying size, i.e., small and large rectangles, when negative numbers (-9, -8, -7, -6, -4, -3, -2, -1) were displayed together with positive distractor numbers (+6, +7, +8, +9) and in the mental-number-line compatible condition.

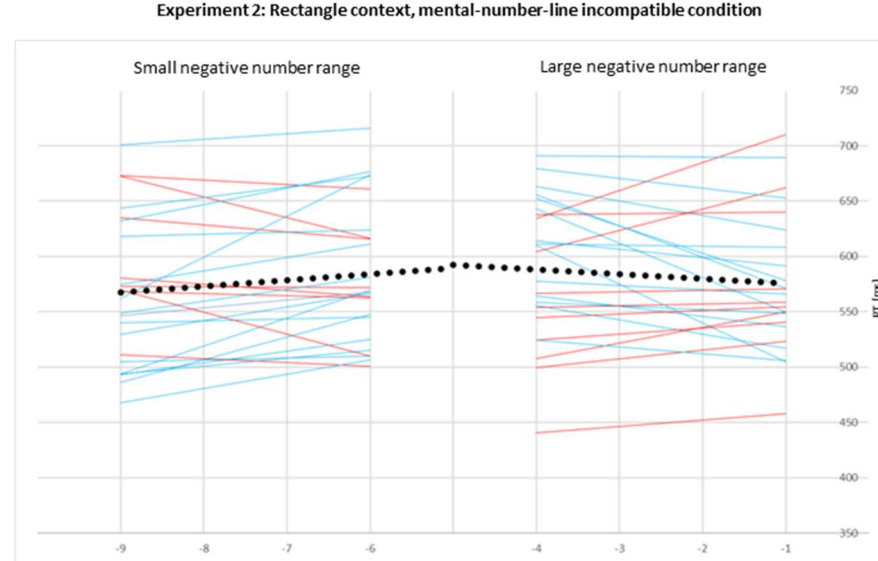


Figure 4. Individual slopes and mean slopes when classifying negative numbers relative to -5. Slopes were calculated to reflect the numerical distance effect: Numbers that are closer to the target number were expected to be responded to slower than numbers that are farther away from the target number. Individual slopes in blue color reflect this assumption, slopes in red color do not. The black dashed lines show mean slopes over all participants. This figure shows results for experiment 1, where numbers were displayed together with objects of varying size, i.e., small and large rectangles, when negative numbers (-9, -8, -7, -6, -4, -3, -2, -1) were displayed together with positive distractor numbers (+6, +7, +8, +9) and in the mental-number-line incompatible condition.

Experiment 3: Arrow context, mental-number-line compatible condition

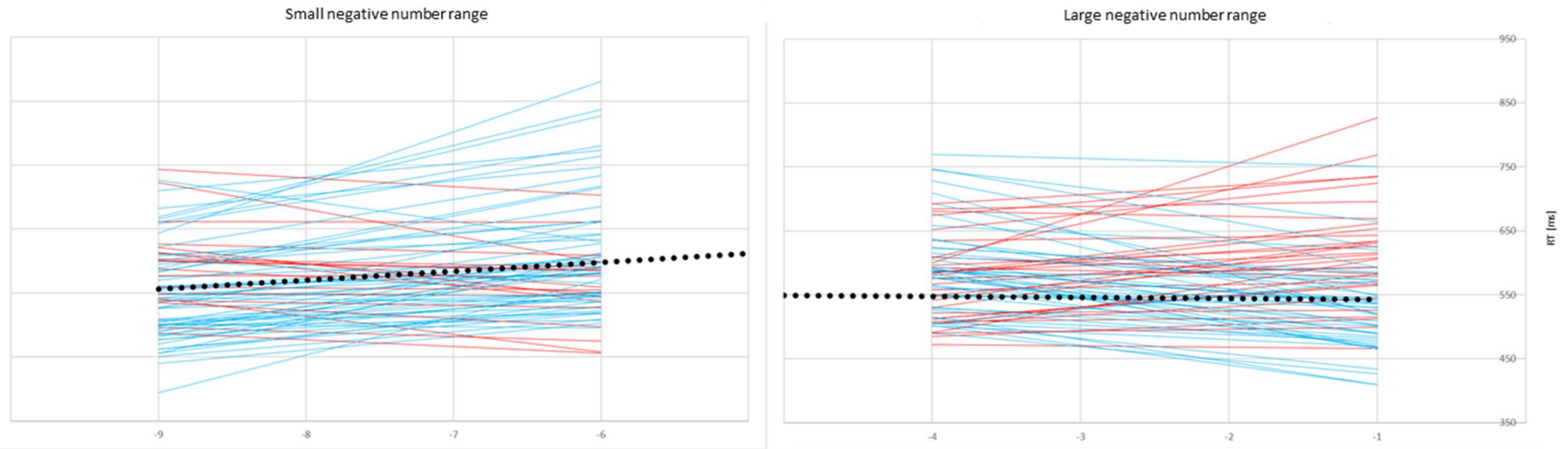


Figure 5. Individual slopes and mean slopes when classifying negative numbers relative to -5. Slopes were calculated to reflect the numerical distance effect: Numbers that are closer to the target number were expected to be responded to slower than numbers that are farther away from the target number. Individual slopes in blue color reflect this assumption, slopes in red color do not. The black dashed lines show mean slopes over all participants. This figure shows results for experiment 1, where numbers were displayed together with spatially oriented objects, i.e., left- and right- pointing arrows, when negative numbers (-9, -8, -7, -6, -4, -3, -2, -1) were displayed together with positive distractor numbers (+6, +7, +8, +9) and in the mental-number-line compatible condition.

Experiment 3: Arrow context, mental-number-line incompatible condition

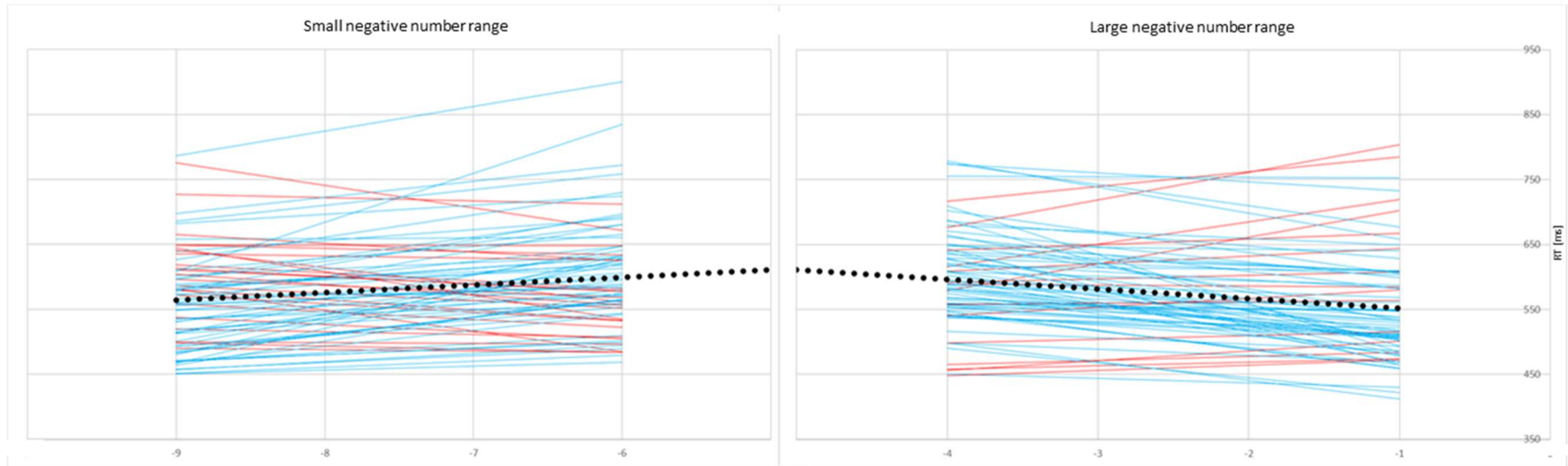


Figure 6. Individual slopes and mean slopes when classifying negative numbers relative to -5. Slopes were calculated to reflect the numerical distance effect: Numbers that are closer to the target number were expected to be responded to slower than numbers that are farther away from the target number. Individual slopes in blue color reflect this assumption, slopes in red color do not. The black dashed lines show mean slopes over all participants. This figure shows results for experiment 1, where numbers were displayed together with spatially oriented objects, i.e., left- and right- pointing arrows, when negative numbers (-9, -8, -7, -6, -4, -3, -2, -1) were displayed together with positive distractor numbers (+6, +7, +8, +9) and in the mental-number-line incompatible condition.

Experiment 4: Rectangle context, mental-number-line compatible condition

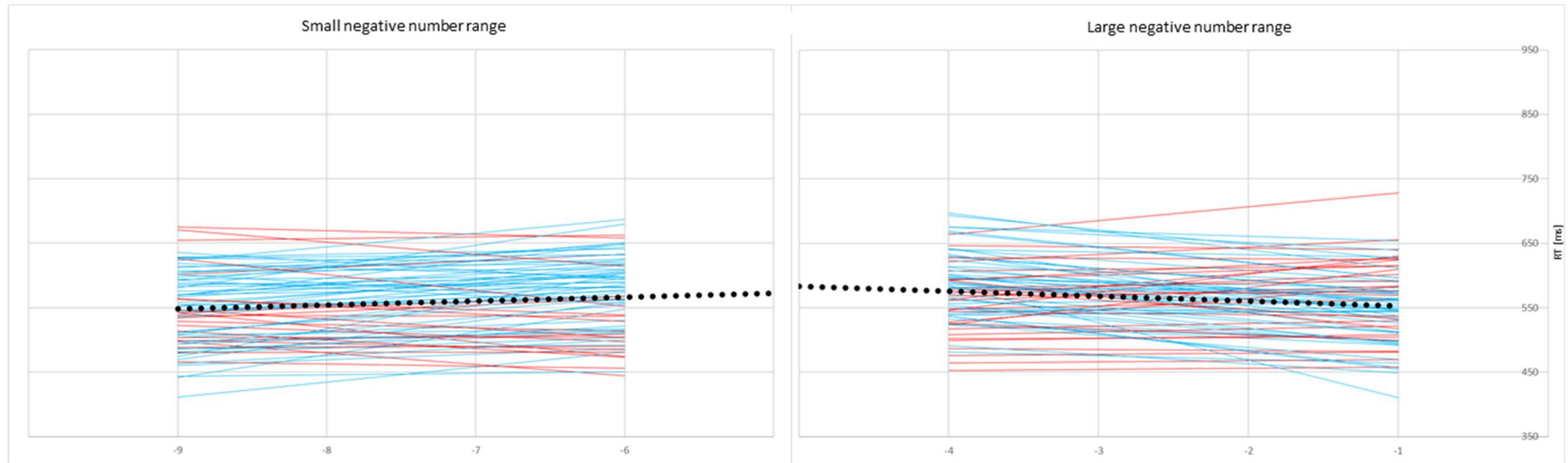


Figure 7. Individual slopes and mean slopes when classifying negative numbers relative to -5. Slopes were calculated to reflect the numerical distance effect: Numbers that are closer to the target number were expected to be responded to slower than numbers that are farther away from the target number. Individual slopes in blue color reflect this assumption, slopes in red color do not. The black dashed lines show mean slopes over all participants. This figure shows results for experiment 1, where numbers were displayed together with objects of varying size, i.e., small and large rectangles, when negative numbers (-9, -8, -7, -6, -4, -3, -2, -1) were displayed together with positive distractor numbers (+6, +7, +8, +9) and in the mental-number-line compatible condition.

Experiment 4: Rectangle context, mental-number-line compatible condition

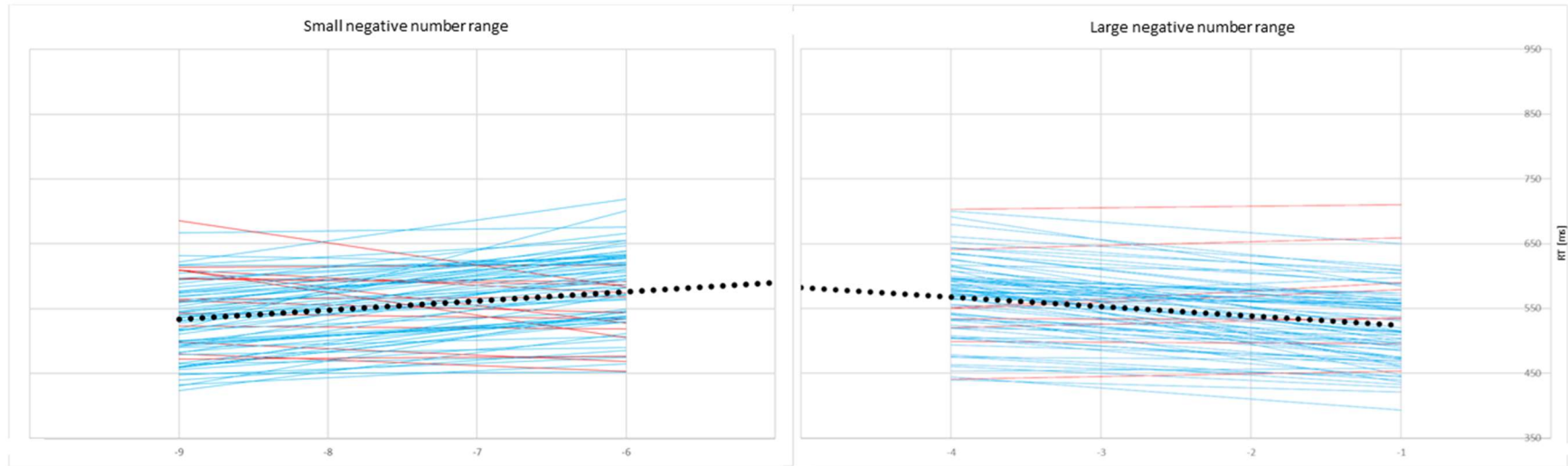


Figure 8. Individual slopes and mean slopes when classifying negative numbers relative to -5. Slopes were calculated to reflect the numerical distance effect: Numbers that are closer to the target number were expected to be responded to slower than numbers that are farther away from the target number. Individual slopes in blue color reflect this assumption, slopes in red color do not. The black dashed lines show mean slopes over all participants. This figure shows results for experiment 1, where numbers were displayed together with objects of varying size, i.e., small and large rectangles, when negative numbers (-9, -8, -7, -6, -4, -3, -2, -1) were displayed together with positive distractor numbers (+6, +7, +8, +9) and in the mental-number-line incompatible condition.