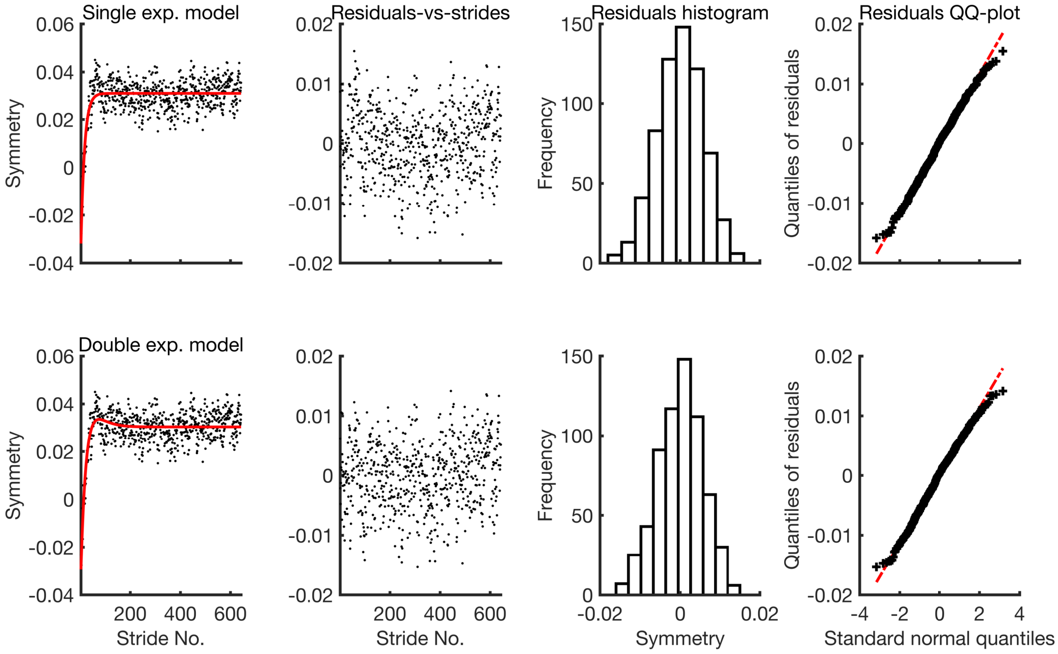
Supplementary File: “On Nonlinear Regression for Trends in Split-belt Treadmill Training”

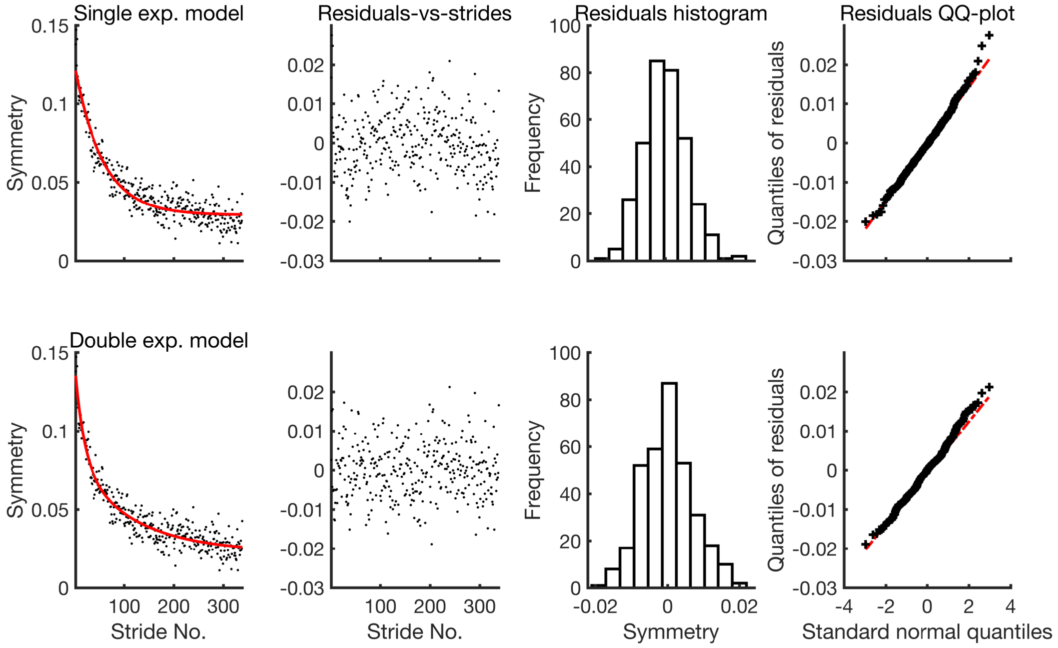
Usman Rashid
09/07/2020

Section 3.1.1: Fit and diagnostic plots for group-averaged data

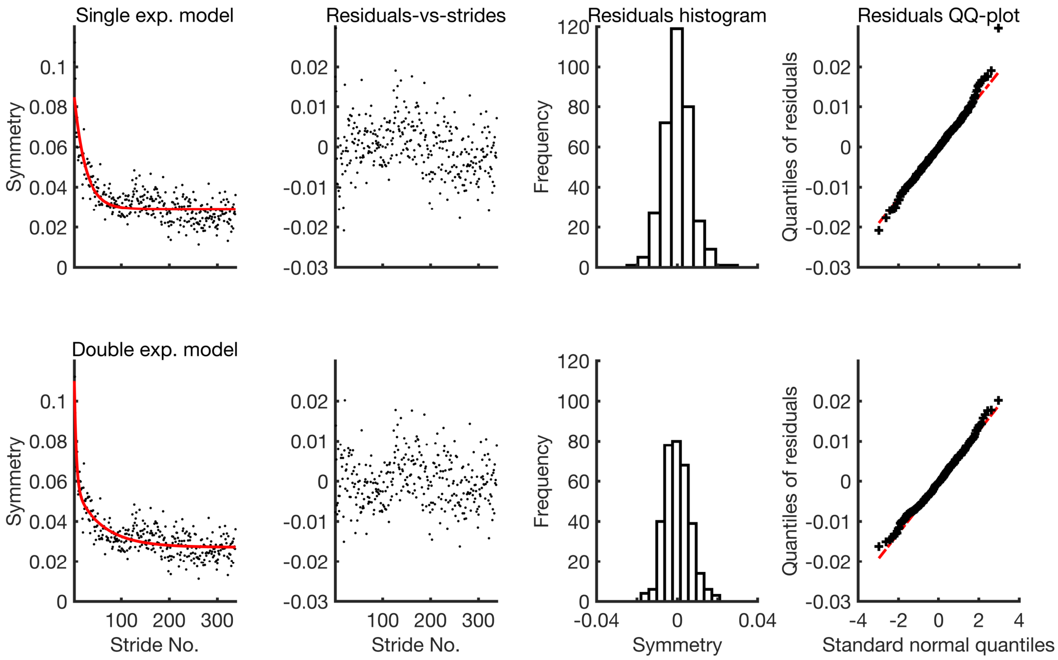
Session II, Adaptation



Session I, De-adaptation



Session II, De-adaptation



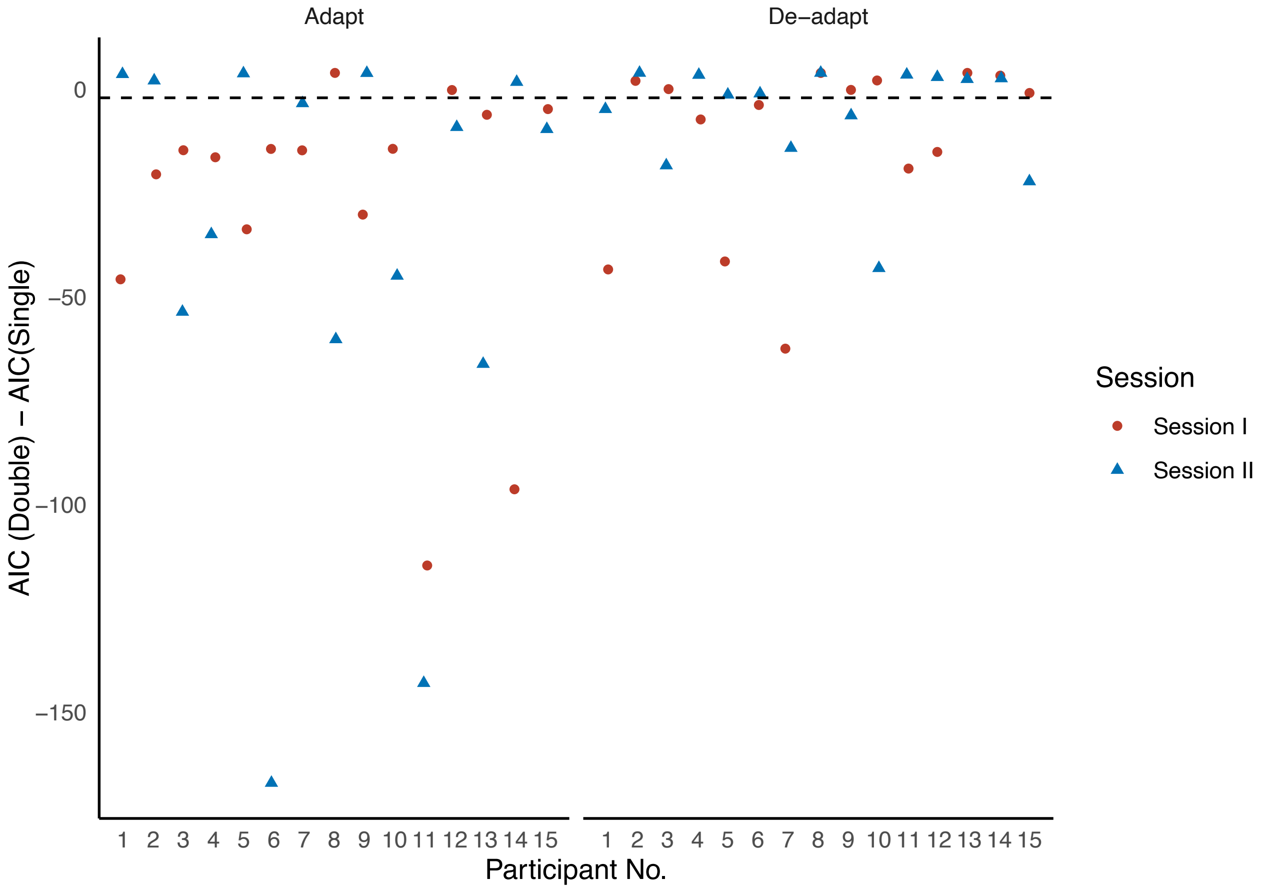
Section 3.1.2: Estimates and 95% confidence intervals without the linearisation assumption. All the numbers are rounded to three decimal places.

Phase	**Parameter**	**Session**		**CI Overlap**
		Session I	Session II	
Adapt	$\hat{a}_s$	-0.050 [-0.054, -0.046]	0.641 [0.021, 0.942]	No*
	$\hat{b}_s$	-0.004 [-0.005, -0.003]	-0.033 [-0.039, -0.019]	No*
	$\hat{a}_f$	-0.088 [-0.094, -0.087]	-0.704 [-1.069, -0.084]	Yes
	$\hat{b}_f$	-0.047 [-0.054, -0.041]	-0.035 [-0.051, -0.031]	Yes
	$\hat{c}$	0.024 [0.021, 0.027]	0.030 [0.030, 0.031]	No*
De-adapt	$\hat{a}_s$	0.063 [0.041, 0.134]	0.030 [0.018, 0.039]	No*
	$\hat{b}_s$	-0.010 [-0.013, 0.000]	-0.017 [-0.026, -0.004]	Yes
	$\hat{a}_f$	0.053 [0.039, 0.066]	0.068 [0.052, 0.086]	Yes
	$\hat{b}_f$	-0.064 [-0.116, -0.029]	-0.239 [-0.401, -0.087]	Yes
	$\hat{c}$	0.024 [-0.943, 0.027]	0.027 [0.019, 0.029]	Yes

Section 3.1.2: Estimates and 95% confidence intervals with the linearisation assumption. All the numbers are rounded to three decimal places.

Phase	**Parameter**	**Session**		**CI Overlap**
		Session I	Session II	
Adapt	$\hat{a}_s$	-0.05 [-0.054, -0.046]	0.641 [-224.692, 225.973]	Yes
	$\hat{b}_s$	-0.004 [-0.005, -0.003]	-0.033 [-0.384, 0.317]	Yes
	$\hat{a}_f$	-0.088 [-0.094-0.081]	-0.704 [-226.033, 224.625]	Yes
	$\hat{b}_f$	-0.047 [-0.054, -0.039]	-0.035 [-0.384, 0.313]	Yes
	$\hat{c}$	0.024 [0.021, 0.027]	0.03 [0.030, 0.031]	No*
De-adapt	$\hat{a}_s$	0.063 [0.050, 0.076]	0.030 [0.024, 0.036]	No*
	$\hat{b}_s$	-0.010 [-0.013, -0.007]	-0.017 [-0.022, -0.012]	Yes
	$\hat{a}_f$	0.053 [0.039, 0.068]	0.068 [0.052, 0.083]	Yes
	$\hat{b}_f$	-0.064 [-0.094, -0.035]	-0.239 [-0.333, -0.145]	No*
	$\hat{c}$	0.024 [0.021, 0.028]	0.027 [0.026, 0.028]	Yes

Section 3.2: Difference in AIC values from the double and single exponential models for participant symmetry series.

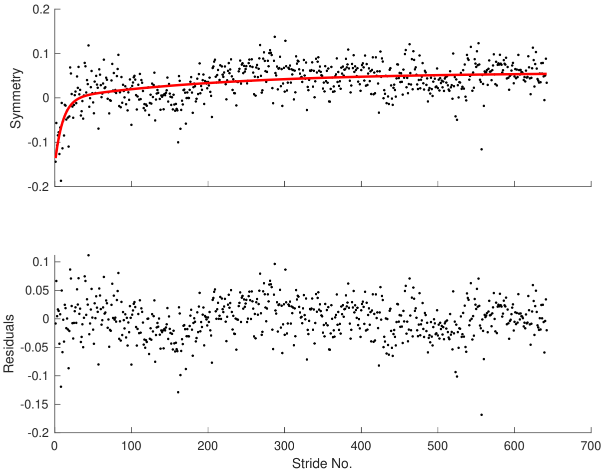


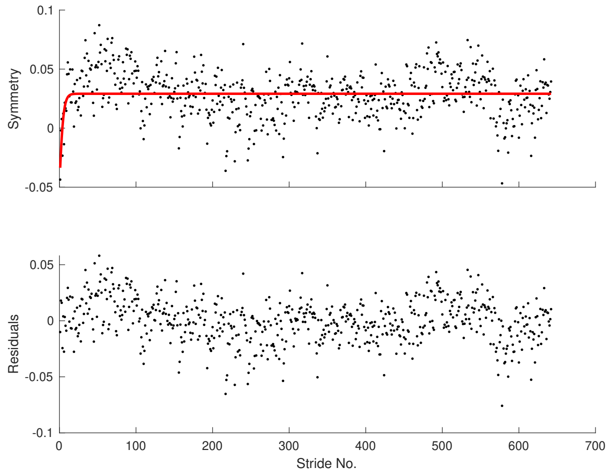
Note: The horizontal dotted line is plotted at -2.

Section 3.2: Double exponential fit and residuals-vs-strides plots for individual symmetry series

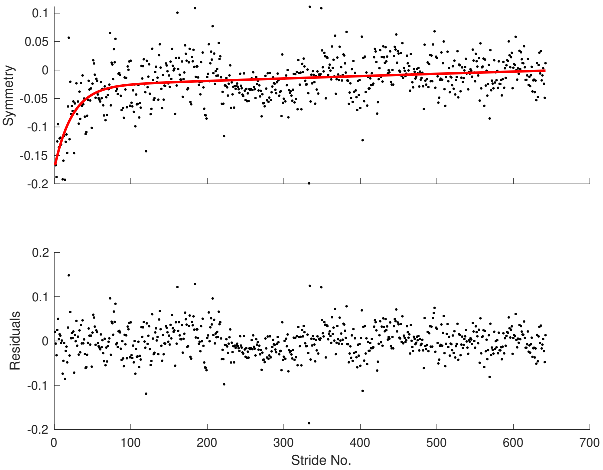
Session I, Adaptation

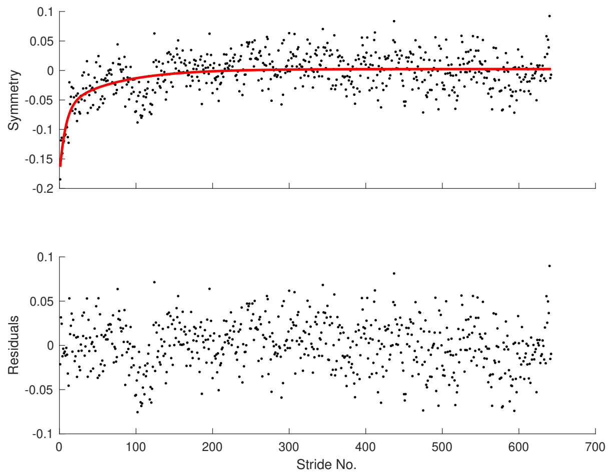
Participant 01, 02



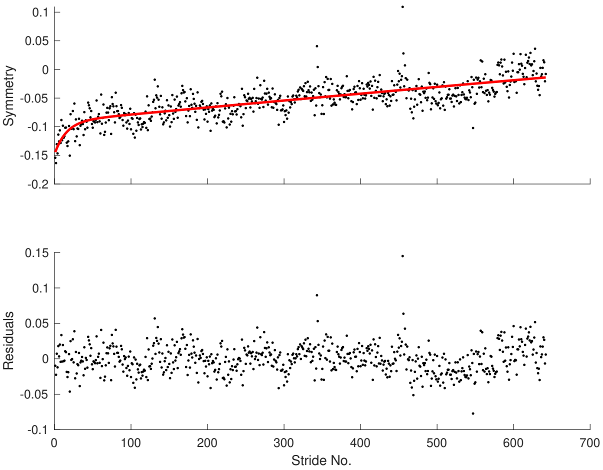


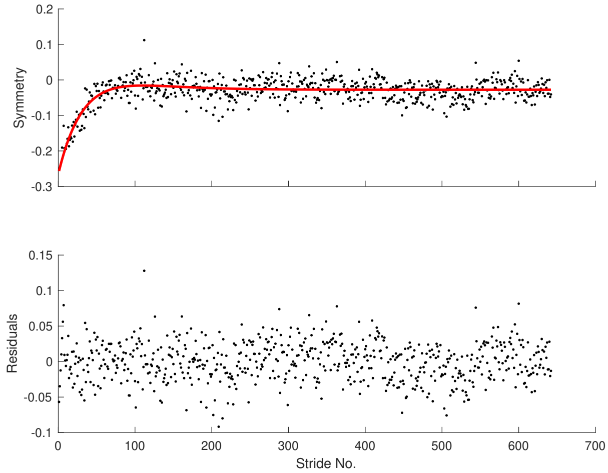
Participant 03, 04



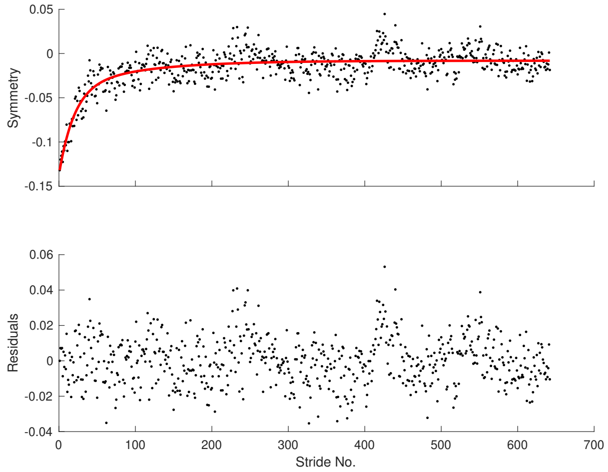


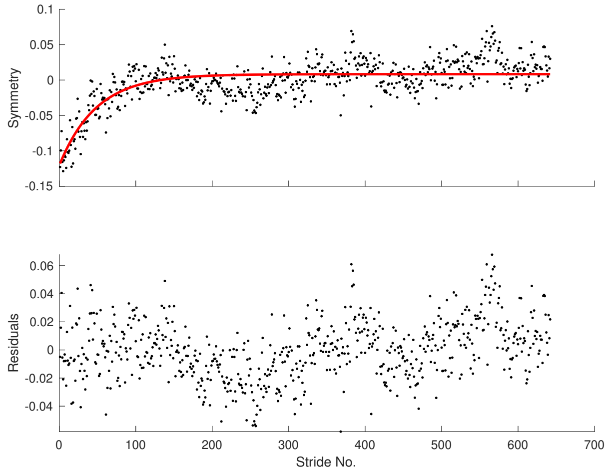
Participant 05, 06



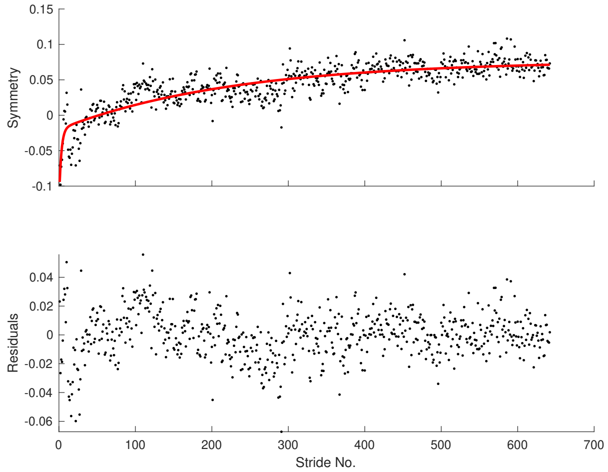


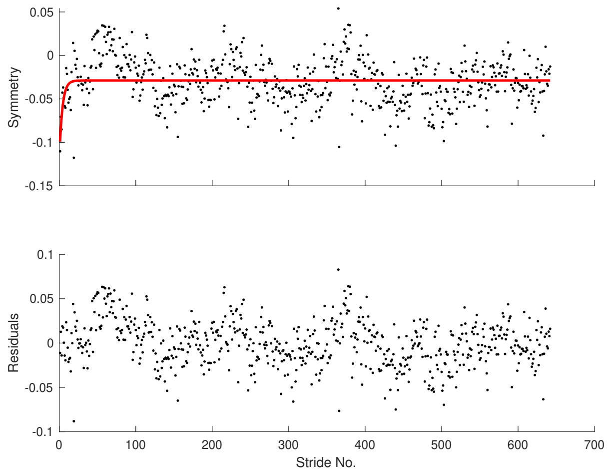
Participant 07, 08



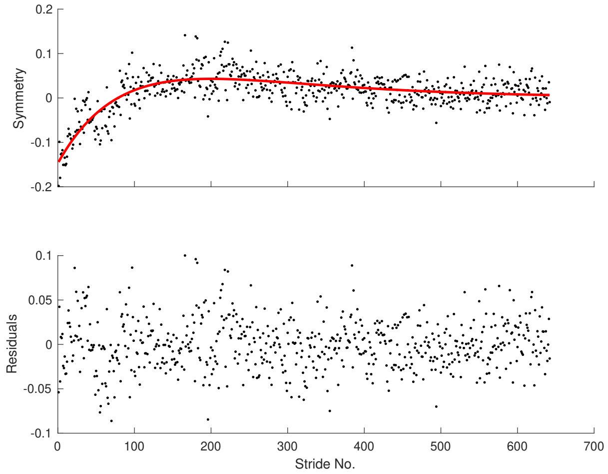


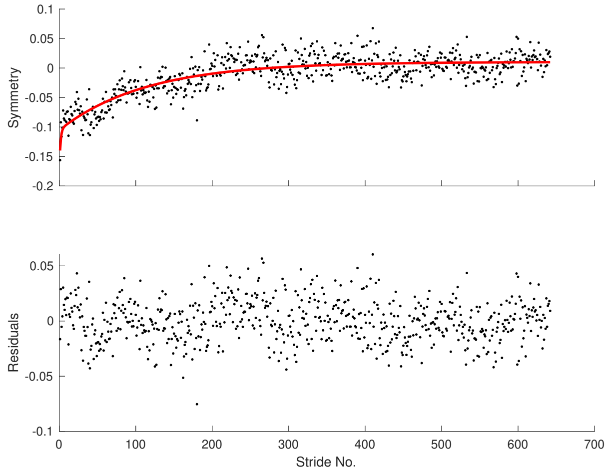
Participant 09, 10



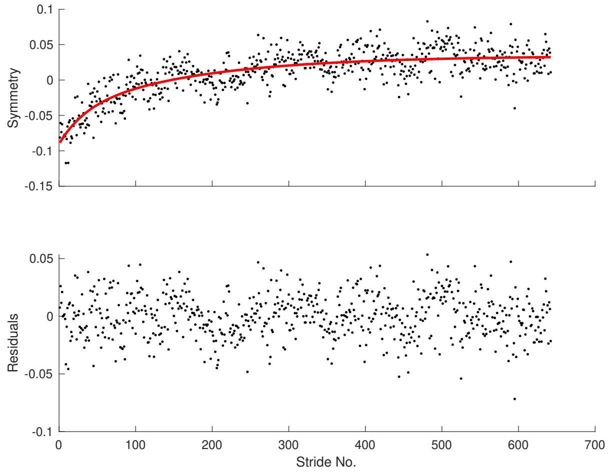


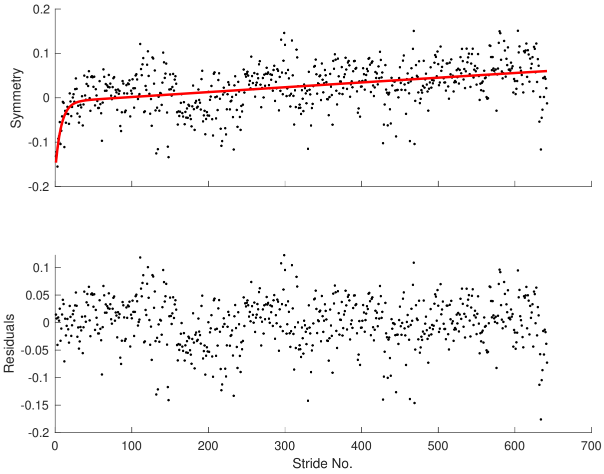
Participant 11, 12



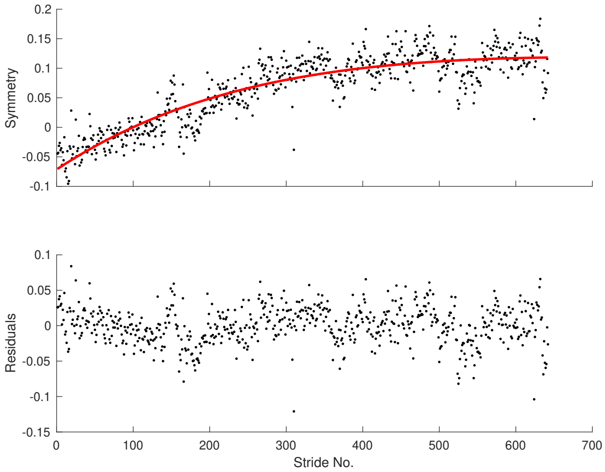


Participant 13, 14



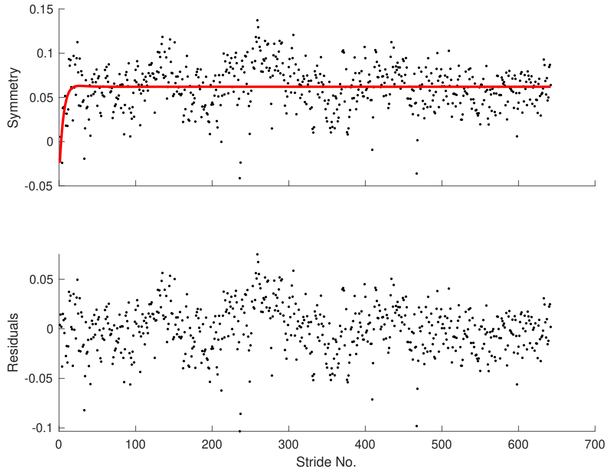


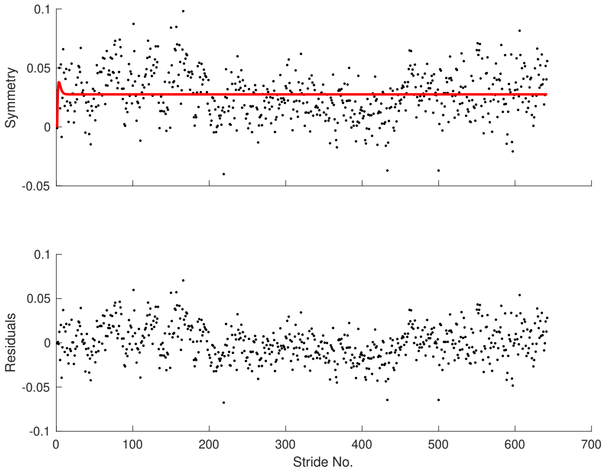
Participant 15



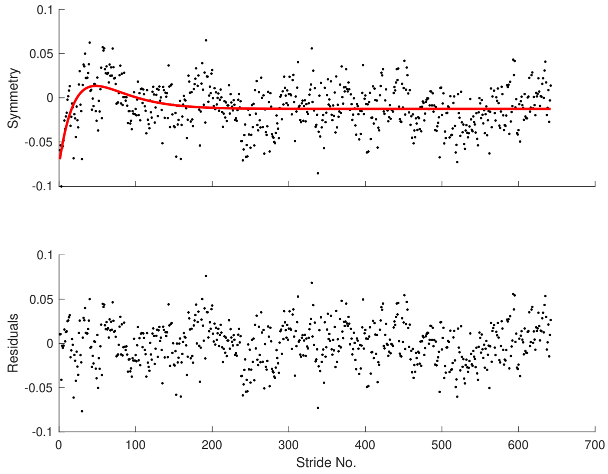
Session II, Adaptation

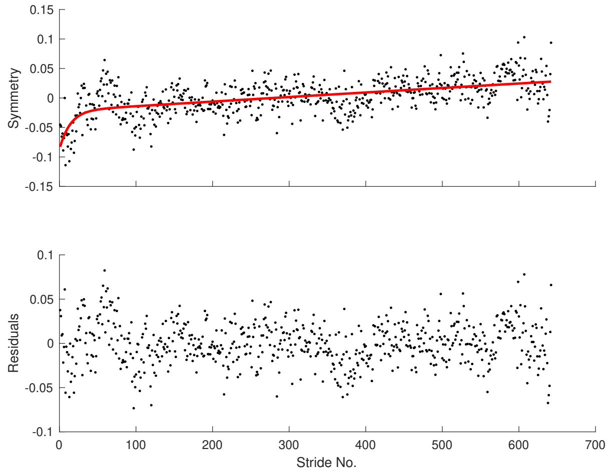
Participant 01, 02



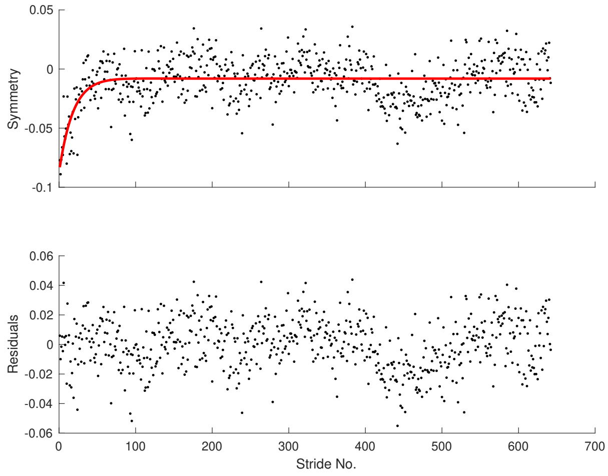


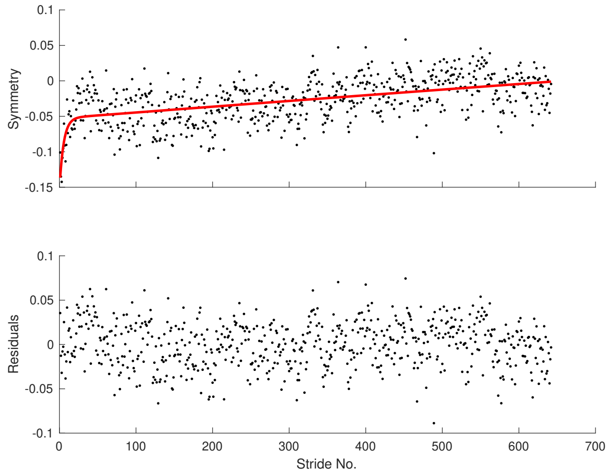
Participant 03, 04



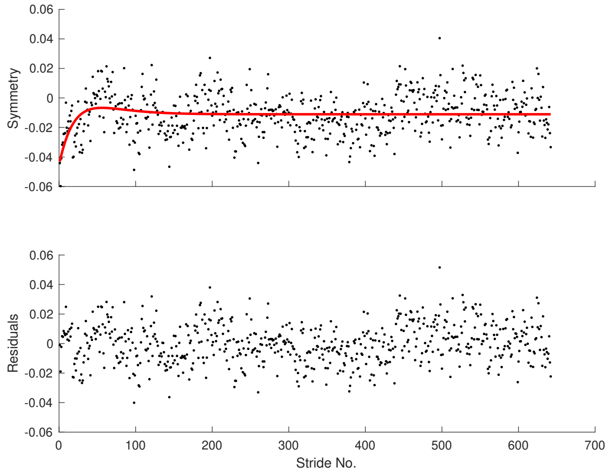


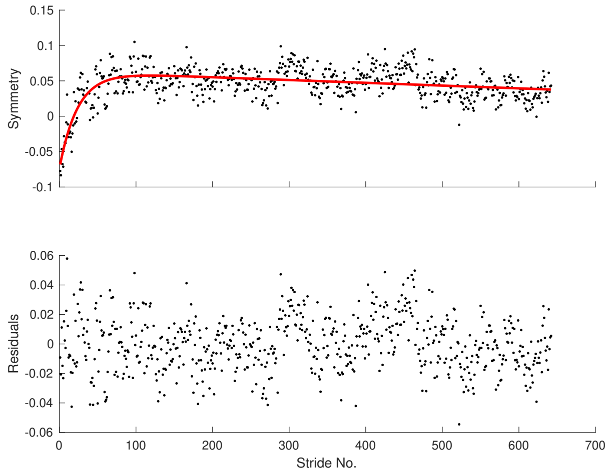
Participant 05, 06



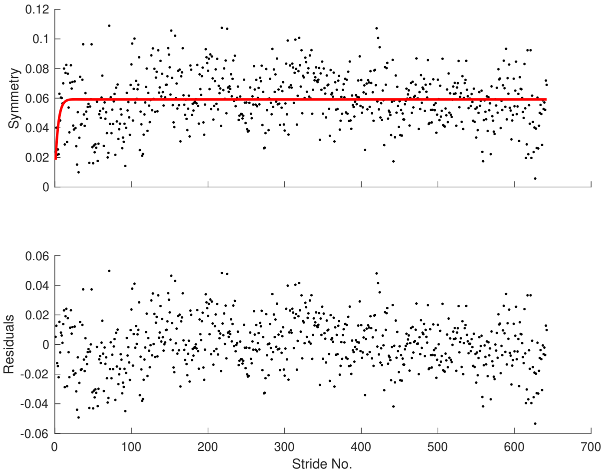


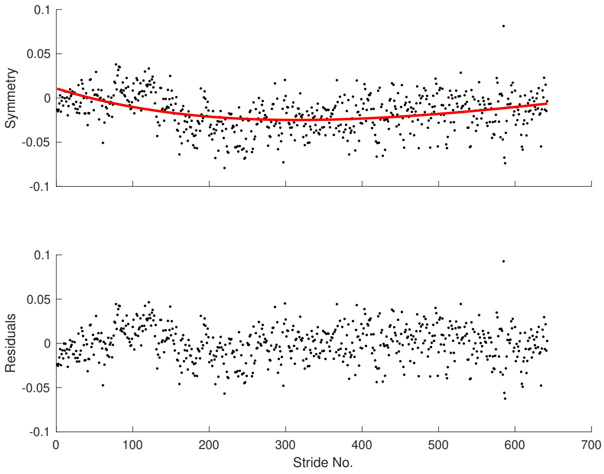
Participant 07, 08





Participant 09, 10





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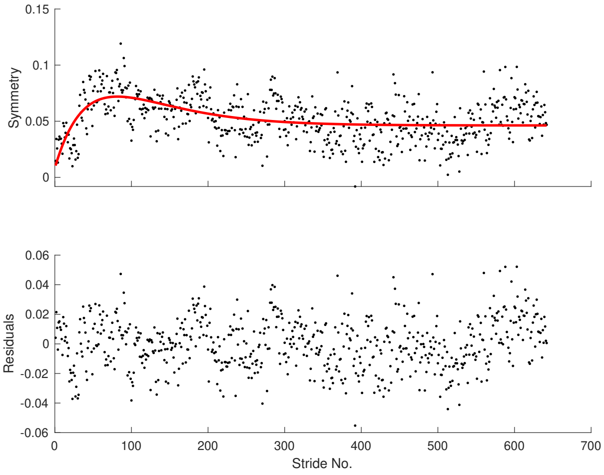

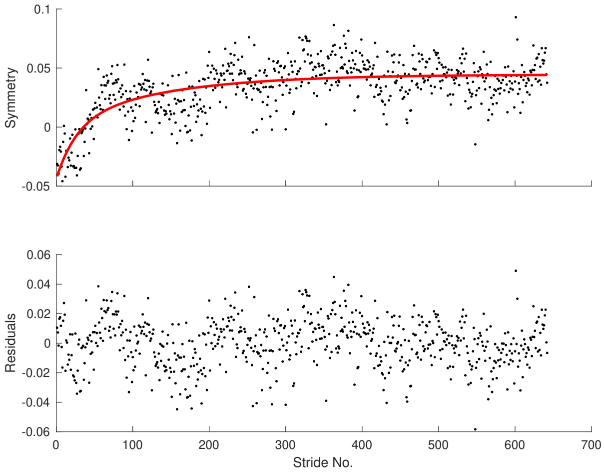

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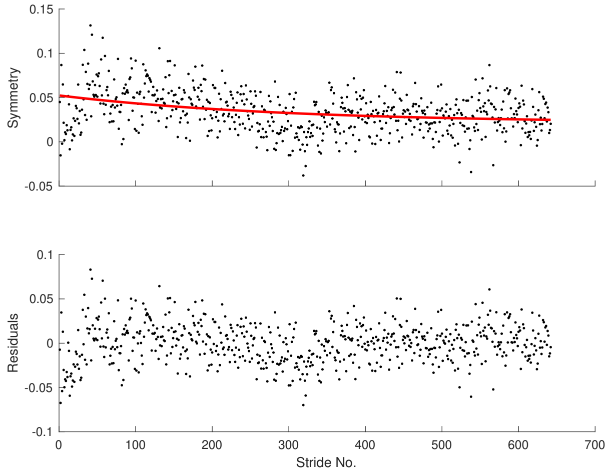
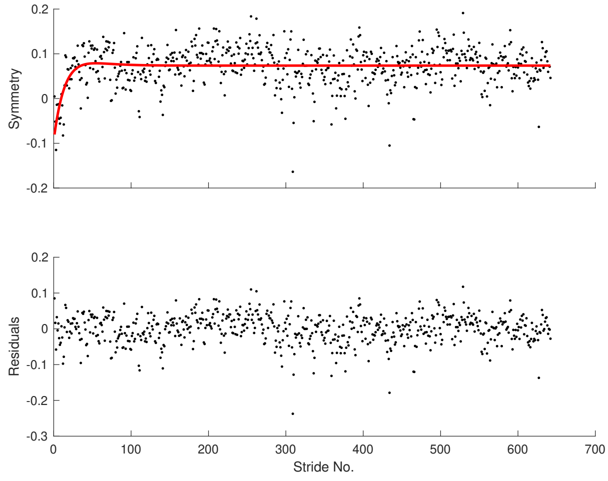
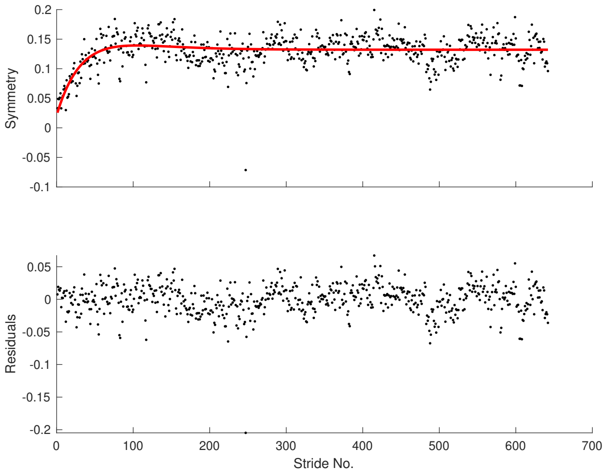


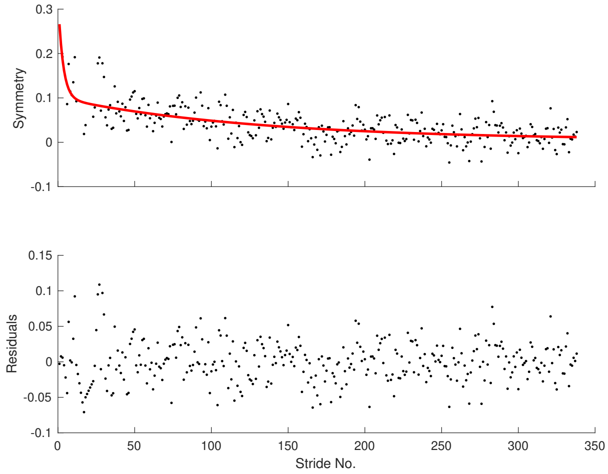


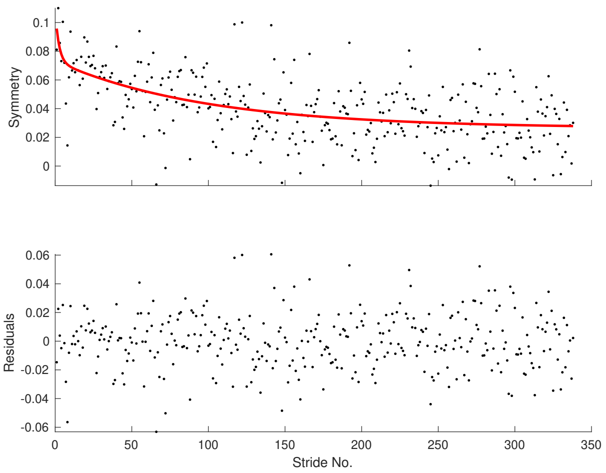
Participant 15



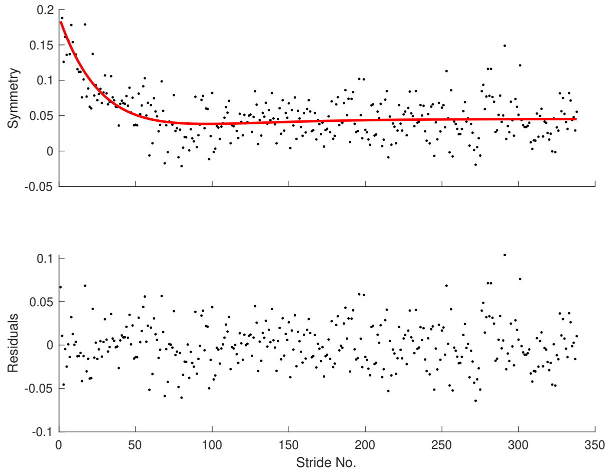
Session I, De-adaptation

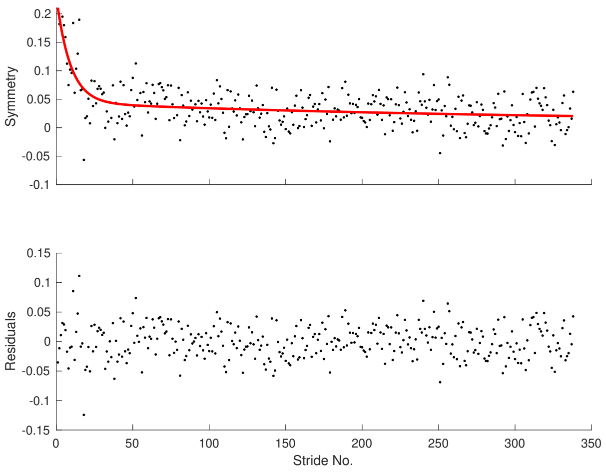
Participant 01, 02



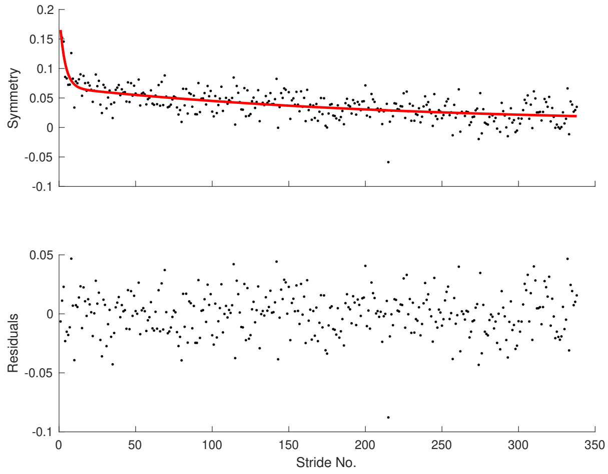


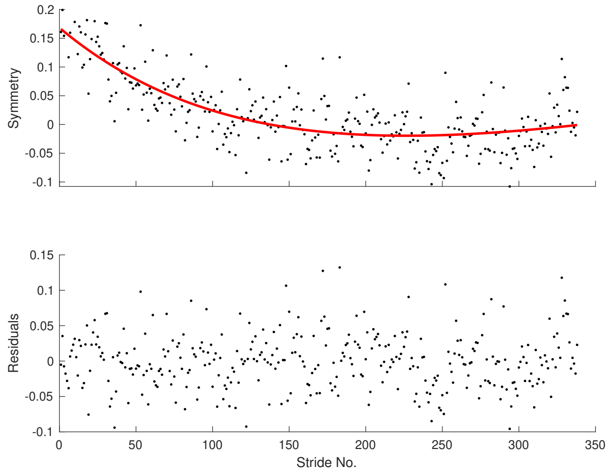
Participant 03, 04



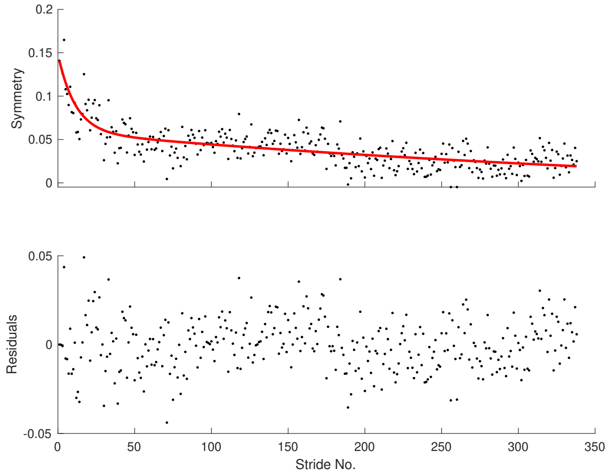


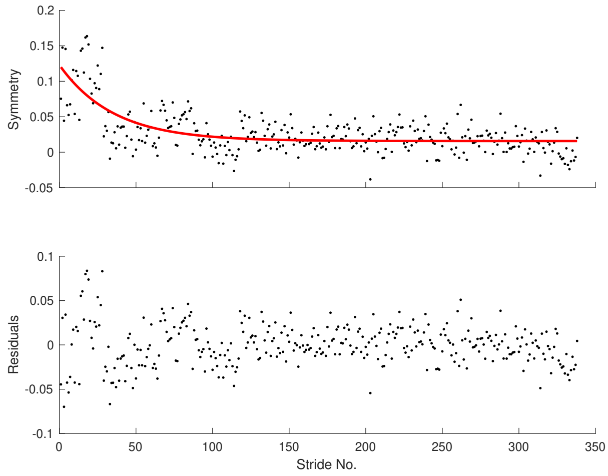
Participant 05, 06



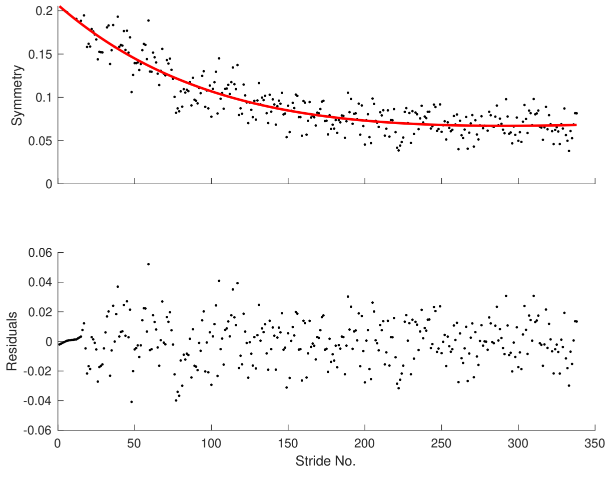


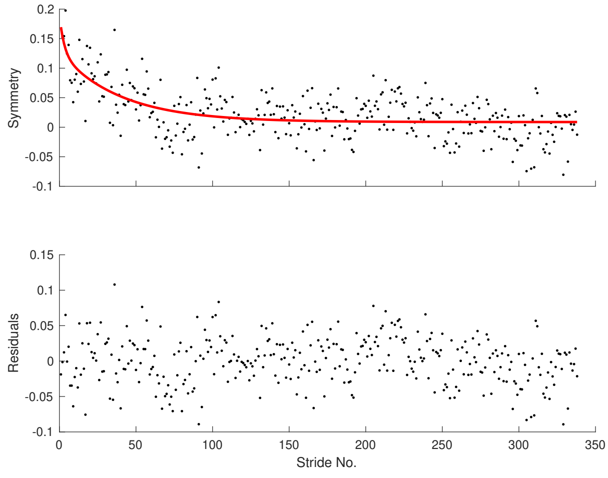
Participant 07, 08



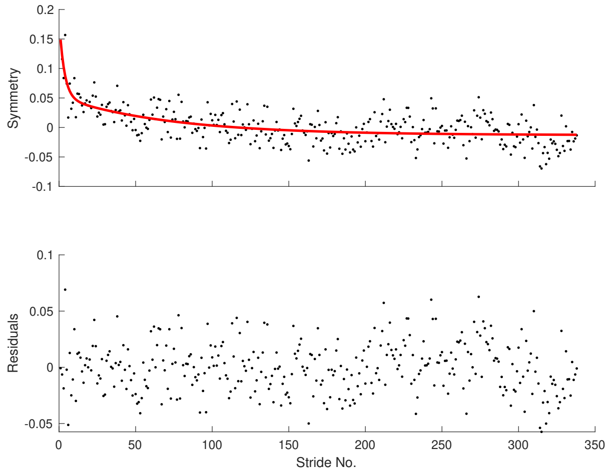


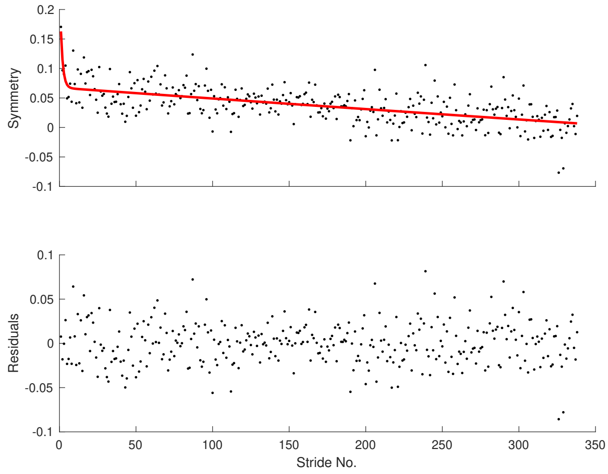
Participant 09, 10



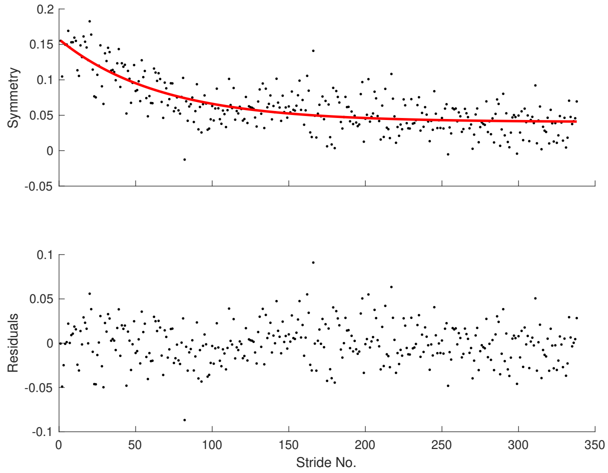


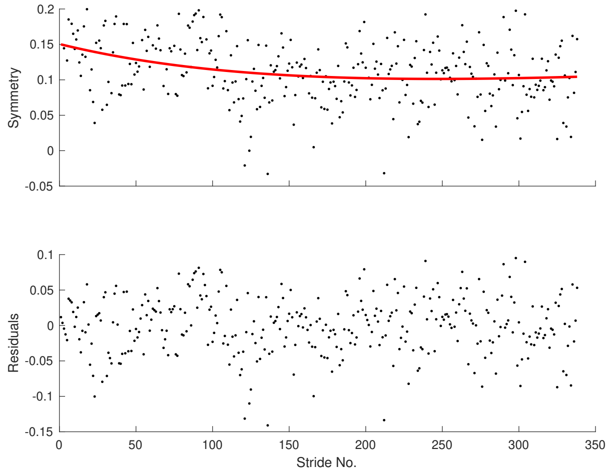
Participant 11, 12



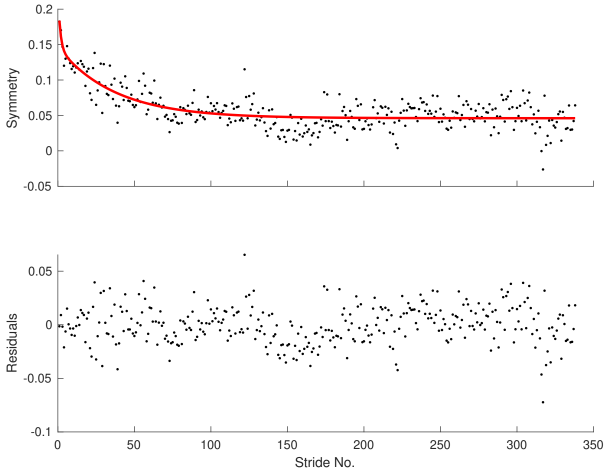


Participant 13, 14



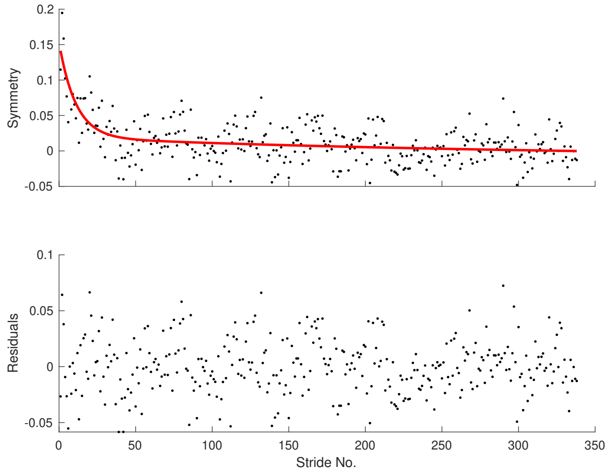


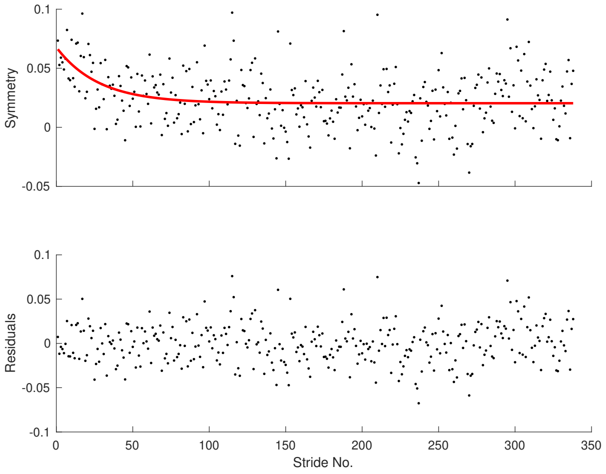
Participant 15



Session II, De-adaptation

Participant 01, 02





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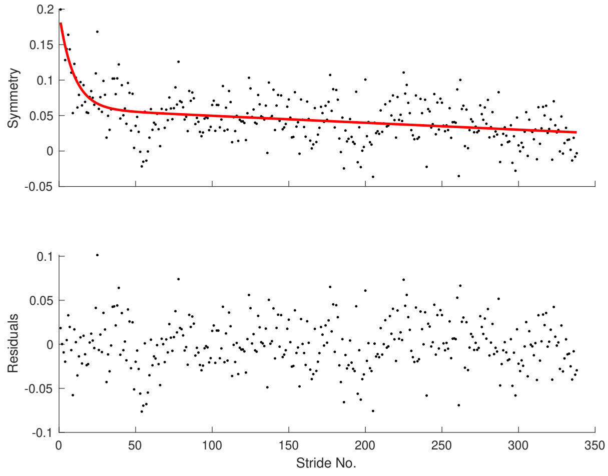
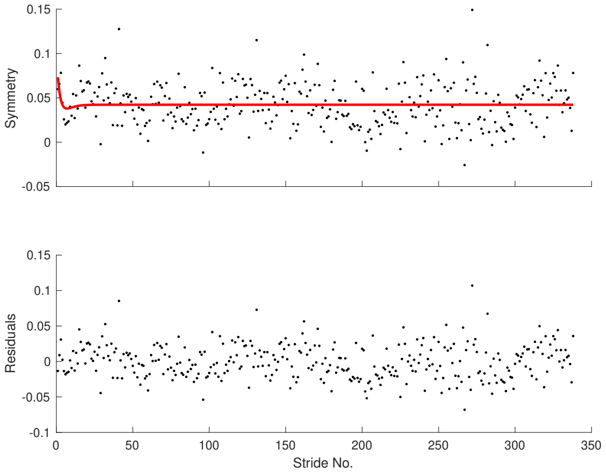
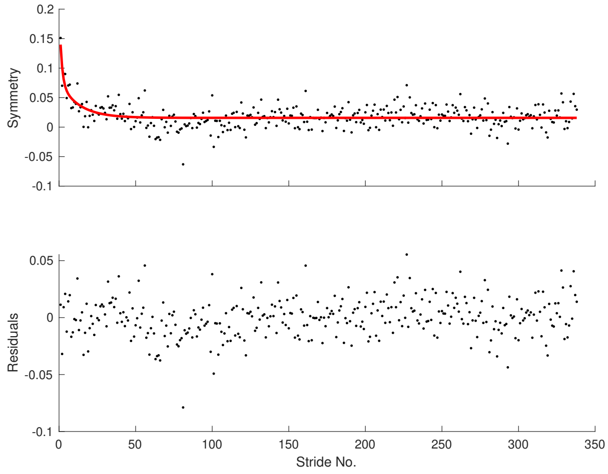
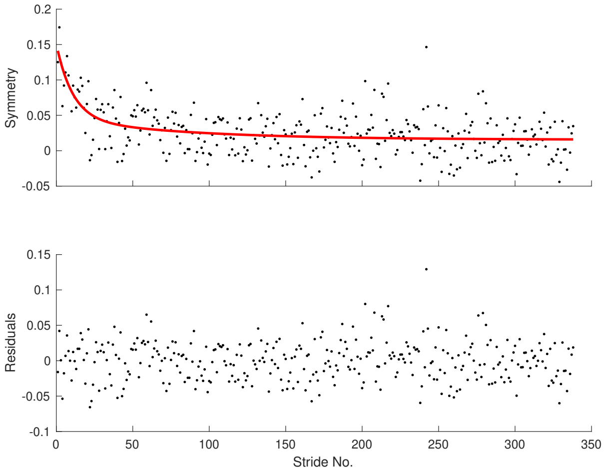


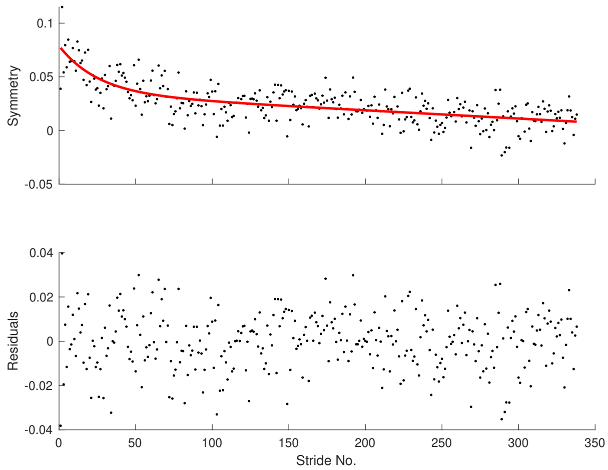


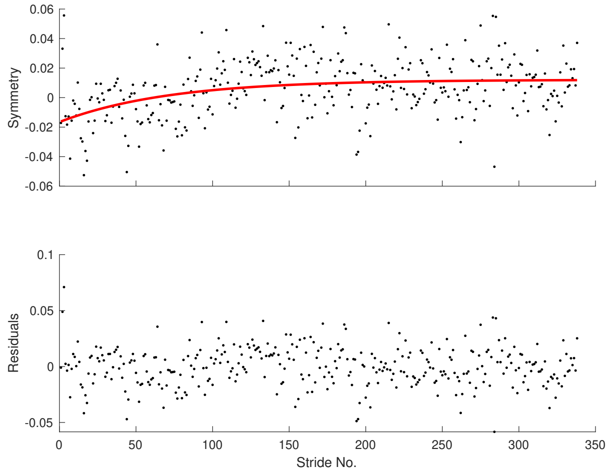
Participant 05, 06



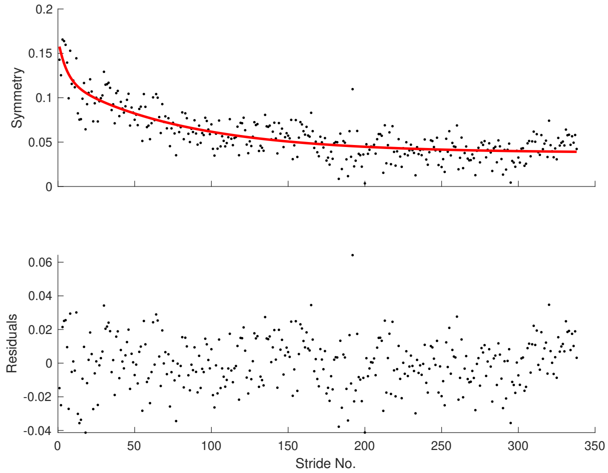


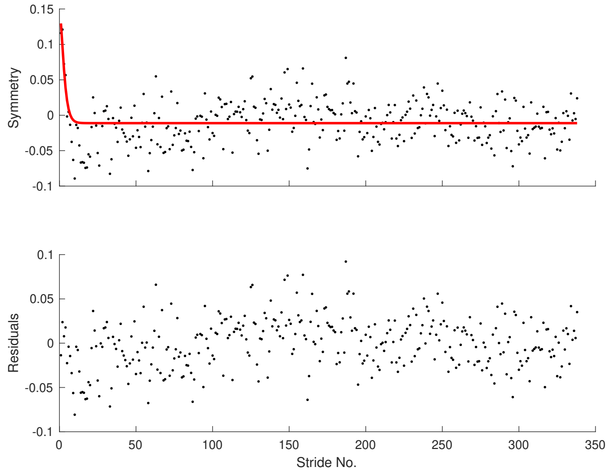
Participant 07, 08



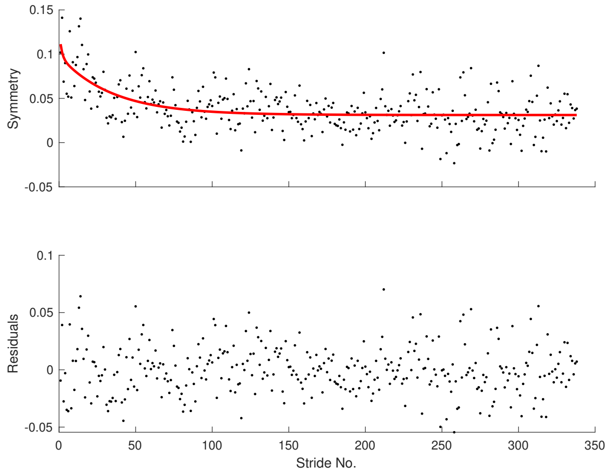


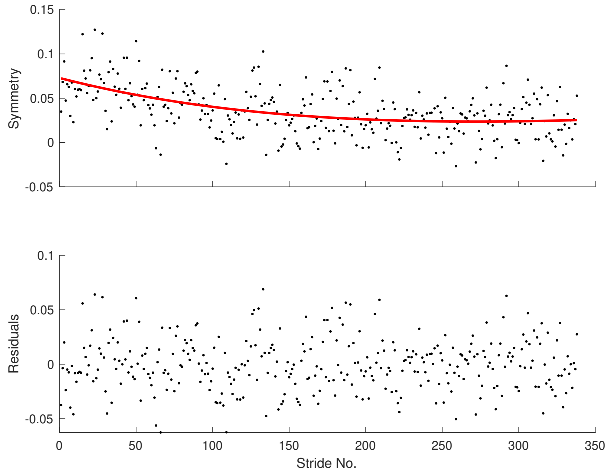
Participant 09, 10





Participant 11, 12





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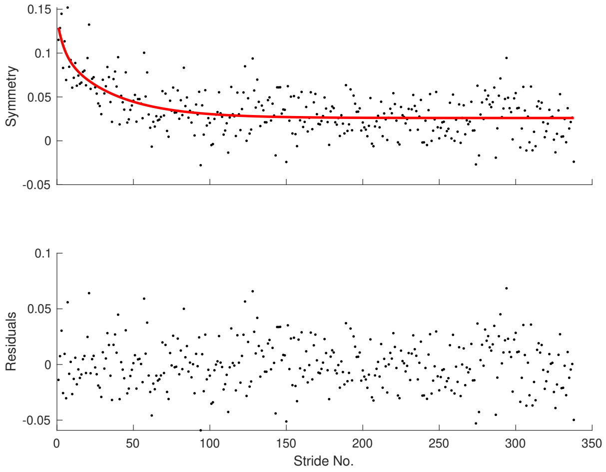

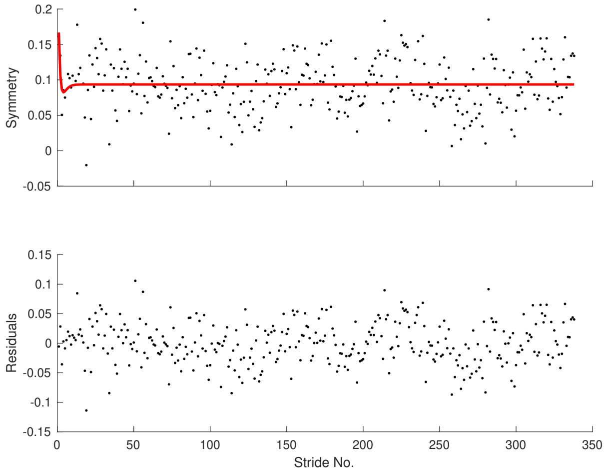

Participant 15