

Supplemental Material

Variation of RTs in the whole block according to thought probe responses and sleepiness at the within-individual level

When considering the variability of RTs for each block considered in its entirety, 75% of the total variance was due to within-participant differences. The LR test for the first model with sleepiness alone as independent variable indicated that RT variability was higher with increasing level of sleepiness [$b = 0.46$ ($SE = 0.09$); LR (1 df) = 25.12; $p < .001$]. The LR test for the model with sleepiness and thought probe responses considered simultaneously indicated that this second model explained a significantly larger part of the variance of RT variability than the model with sleepiness alone [LR (1 df) = 11.76; $p < .001$]. The coefficients for sleepiness, task-related interference, external distractions, and mind-wandering were significant in this second model (see Table S1), indicating that these different variables all have (at least partially) independent influences on RT variability to the non-target stimuli of each block.

Table S1: Multilevel regression models predicting RT variability per block from thought probe responses and sleepiness

	<i>b</i> (<i>SE</i>)	<i>p</i>
Sleepiness	0.36 (0.01)	< .001
Task-related interferences	0.70 (0.35)	.04
External distractions	1.14 (0.42)	.007
Mind-wandering	1.35 (0.44)	.002
Absence	1.02 (0.79)	.20

Note. The coefficients represent contrasts with the reference category (being focused on-task); standard errors are shown in parentheses.

Concerning the mean RTs for each block considered in its entirety, 39% of the total variance was due to within-participant differences. The LR test for the first model with sleepiness alone as independent variable indicated that RTs were faster with increasing level of sleepiness [$b = -3.64$ ($SE = 0.43$); LR (1 df) = 71.18; $p < .001$]. The LR test for the model with sleepiness and thought probe responses considered simultaneously indicated that this second model explained a significantly larger part of the variance of mean RTs than the model with sleepiness only [LR (1 df) = 15.10; $p < .001$]. Interestingly, in this last model, sleepiness remained associated with faster RTs, whereas mind-wandering and EDs were also significant predictors but were associated with slower RTs compared to being fully focused on task (see Table S2). These results suggest that mind-wandering and sleepiness have opposite effects on the speed of RTs to non-target stimuli during the SART at the within-participant level.

Table S2: Multilevel regression models predicting mean RTs per block from thought probe responses and sleepiness

	<i>b</i> (<i>SE</i>)	<i>p</i>
Sleepiness	-3.97 (0.45)	< .001
Task-related interferences	1.92 (1.56)	.22
External distractions	5.72 (1.91)	.003
Mind-wandering	5.01 (1.98)	.01
Absence	-2.84 (3.56)	.42

Note. The coefficients represent contrasts with the reference category (being focused on-task); standard errors are shown in parentheses.