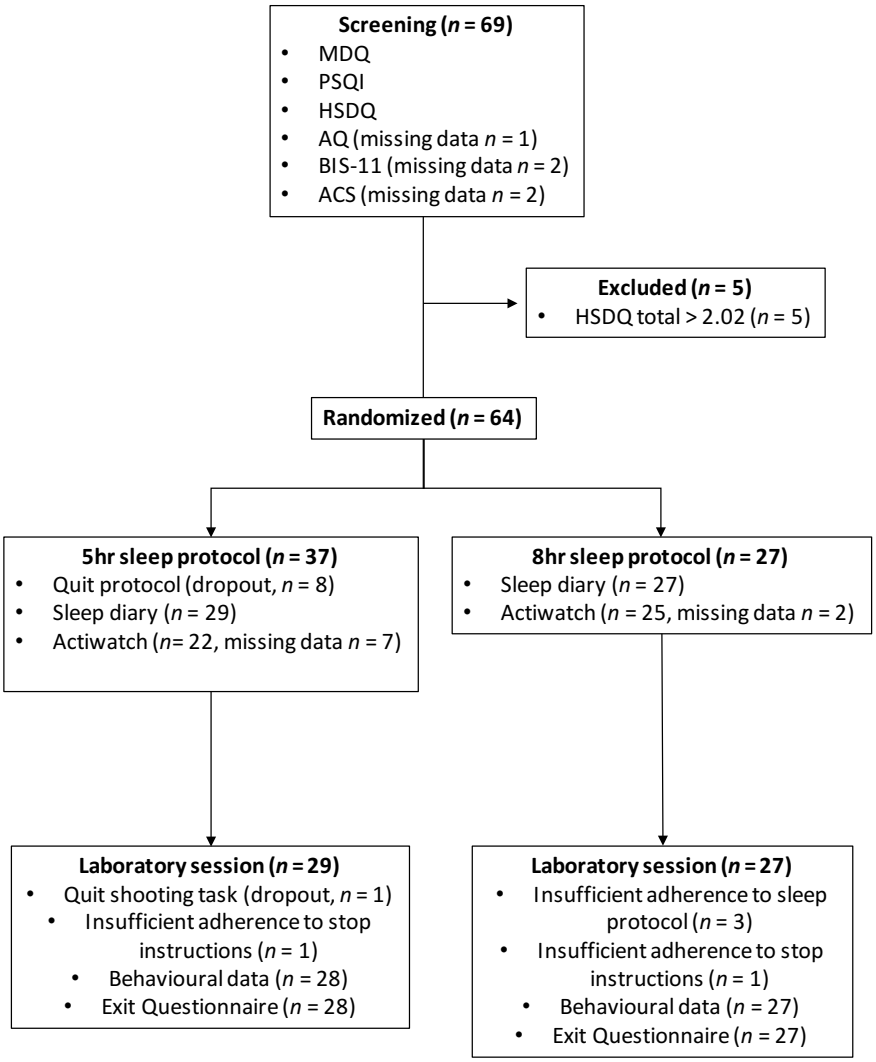
Code Book

This archive contains all processed data underlying the results published in 'Effects of Threat and Sleep Deprivation on Action Tendencies and Response Inhibition' (Van Peer, Gladwin, and Nieuwenhuys, *Emotion*, 2018, forthcoming). See Metadata for a brief description of the study and "Methodology.pdf" (this archive) for detailed information about data collection and processing. Materials, raw data and scripts used for preprocessing and analysis are available from the corresponding authors (Jacobien van Peer: j.vanpeer@psych.ru.nl or Arne Nieuwenhuys: a.nieuwenhuys@auckland.ac.nz) upon request.

Figure 1. Participant flow and sample size per stage (main study).



Note. Participants that did not adhere sufficiently to the sleep protocol ($n = 3$) were excluded from all analyses reported in the main text of the publication. Participants that did not adhere sufficiently to stop instructions ($n = 2$) were excluded from the SSRT analyses only. Robustness analyses *including* these participants are reported in the Supplemental Material.

Archived Data Files

Data files are listed in the order in which data were collected and reported (see Figure 1 and Methodology). A brief description of each dataset is given below, followed by a detailed description of all variables per dataset. See Methodology document for more information about how variables were measured and calculated.

2018_PeerNieuw_SleepSSST_Sleeppilot.csv. Data from the pilot study of the sleep protocols. This file contains demographic data of the participants (n = 8) and single trial response times from the Psychomotor Vigilance Test.

2018_PeerNieuw_SleepSSST_Screening. Data collected during the screening session of the main study. This file contains demographic data (n = 69) and sum scores of the screening questionnaires (n = 69) and trait questionnaires (n = 67/68, 1 or 2 missing data).

2018_PeerNieuw_SleepSSST_SleepProtocol. Data collected during the sleep protocol with the sleep diary and Actiwatch (n = 56, excl. participants excluded at screening [n = 5] and dropout during sleep protocol [n = 8]. Actiwatch has additional missing data [n = 9] due to technical problems or wrong use). This file contains sum scores of sleeping times (diary and Actiwatch), (raw) subjective ratings of sleep quality and recovery status per night, and information about the time of testing (laboratory session, start shooting task) and time awake at testing.

2018_PeerNieuw_SleepSSST_Accuracy.csv. Accuracy data of the shooting task (n = 55, excl. participants excluded at screening [n = 5] and dropout [n = 9]). This file contains the ratio of correct responses per participant per task condition, and the sum scores used for calculation of this measure (#correct responses and #trials per task condition). The #trials was used as a weight factor in the analyses.

2018_PeerNieuw_SleepSSST_SDT.csv. Signal detection data of the shooting task (n = 55, excl. participants excluded at screening [n = 5] and dropout [n = 9]). This file contains the sensitivity (d') and (log transformed) response bias (decision criterion, β) per participant per Cue condition, as well as the sum scores used for calculation of these measures (#correct and #false alarm responses, #trials, hit rate and false alarm rate).

2018_PeerNieuw_SleepSSST_RT.csv. Response time data of the shooting task (n = 55, excl. participants excluded at screening [n = 5] and dropout [n = 9]). This file contains the single trial response times (of trials without stop-signal) per participant per task condition.

2018_PeerNieuw_SleepSSST_SSRT.csv. Stop Signal Reaction Time (SSRT) data of the shooting task (n = 55, excl. participants excluded at screening [n = 5] and dropout [n = 9]). This file contains the SSRT per participant per Cue condition, as well as the sum scores used for calculation of this measure (the percentile score of the Go RT, average stop-signal delay, #false alarms, #stop trials and ratio false alarms on stop trials).

2018_PeerNieuw_SleepSSST_ExitQuestionnaire.csv. Data from post-experimental questionnaire (n = 55, excl. participants excluded at screening [n = 5] and dropout [n = 9]). This file contains subjective ratings of the sound and the high and low threat opponents from the shooting task. NB for analysis, sound ratings should be reshaped into long format with an additional factor Time (begin, end of task). See ExitQuestionnaire_Dutch.pdf for the questionnaire itself (in Dutch), and Methodolody.pdf for an explanation in English.

Explanation of Variables in Data Files

General. These variables are used in multiple files.

File	Concept	Item Names	Measurement time	Scale	Note
All files	Participant ID	ParticipantID	All	Participant code	
All files (except pilot)	Exclusion	Excluded	Screening, Sleep Protocol, Lab session	Coding: 0 = included, 1 = excluded after screening, 2 = dropout, 3 = insufficient adherence to sleep protocol, 4 = insufficient adherence to stop instructions.	Participants with codes 1 and 2 were excluded from all analyses, those with code 3 from all except the robustness analyses (Supplemental Material) and those with code 4 only from the SSRT analyses.
All files (except pilot)	Sleep Protocol	Group	All	5hr = 5 hour sleep (partial deprivation) protocol, 8hr = 8 hour sleep (normal) protocol	
Accuracy, SDT, RT, SSRT	Threat	Cue	Lab session (shooting task)	LT = low threat opponent, HT = high threat opponent.	
Accuracy, RT	Stimulus	Stimulus	Lab session (shooting task)	Go_gun = Go stimulus (gun), NoGo_phone = NoGo stimulus (phone).	

2018_PeerNieuw_SleepSSST_Sleeppilot.csv.

Concept	Item Names	Measurement time	Scale	Note	Reference
General	ParticipantID			See explanation in General table above.	
Demographics	Age; Gender	Pilot study	Age in years; Gender: F = female, M = male.		
Sleep protocol	Order; Protocol	Pilot study	Order: within-subject order of sleep protocols (5hr_8hr = first 5hr then 8hr, 8hr_5hr = first 8hr then 5hr); Protocol: Sleep protocol (5hr or 8hr sleep).		
Psychomotor Vigilance	Delay.ms	Pilot study	Response time (RT, in milliseconds) on Psychomotor Vigilance task.	Higher RT indicates less vigilance.	(Dinges & Powell, 1985)

2018_PeerNieuw_SleepSSST_Screening.

Concept	Item Names	Measurement time	Scale	Note	Reference
General	ParticipantID; Excluded; Group			See explanation in General table above.	
Demographics	Age; Gender	Screening	Age in years; Gender: F = female, M = male.		
Major Depression	MDQ	Screening	Major Depression Questionnaire screening questions (range 0-4).	Exclusion criterion: "Yes" on both questions (Score = 4).	(Van der Does, Barnhofer, & Williams, 2003)
Sleep problems	HSDQ	Screening	Holland Sleep Disorder Questionnaire total score (range 1-5).	Higher scores indicate more sleep problems. Exclusion criterion: Score > 2.02	(Kerkhof et al., 2013)
Sleep problems	PSQI	Screening	Pittsburgh Sleep Quality Index global score (range 0-21).	Higher scores indicate worse sleep quality. Exclusion criterion: Score > 5.	(Buysse, Reynolds III, Monk, Berman, & Kupfer, 1989)
Aggression	AQ	Screening	Aggression Questionnaire total score (range 29-145).	Higher scores indicate more aggression.	(Buss & Perry, 1992; Dutch version Meesters, Muris, Bosma, Schouten, & Beuving, 1996)
Impulsivity	BIS-11	Screening	Barratt Impulsiveness Scale total score (range 30-120).	Higher scores indicate more impulsivity.	(Patton, Stanford, & Barratt, 1995; Dutch version Lijffijt & Barratt, 2005)
Attentional Control	ACS	Screening	Attentional Control Scale total score (range 20-80).	Higher scores indicate more attentional control.	(Derryberry & Reed, 2002; Dutch version Verwoerd, Cieraad, & de Jong, 2007)

2018_PeerNieuw_SleepSSST_SleepProtocol.csv.

Concept	Item Names	Measurement time	Scale	Note	Reference
General	ParticipantID; Excluded; Group			See explanation in General table above.	
Total Sleep Time	TSTdiaryT1-T3 and AV;	Sleep Protocol	Self-reported total sleep time per night in minutes (Sleep diary). T1 to T3 = night 1 to 3. AV = average over all nights.	Exclusion criterion: average > 90 min deviation from target sleeping time (5hr or 8hr).	(Carney et al., 2012)
Total Sleep Time	TSTawT1-T3 and AV.	Sleep Protocol	Total sleep time per night in minutes recorded by Actiwatch. T1 to T3 = night 1 to 3. AV = average over all nights.	Exclusion criterion: average > 90 min deviation from target sleeping time (5hr or 8hr).	(Actiwatch 2, Philips Respironics, Murrysville, USA; Ancoli-Israel et al., 2015)
Subjective sleep quality and recovery status	SleepqualityT1-T3; RestedT1-T3; AlertT1-T3; FitT1-T3; NegativeT1-T3; PositiveT1-T3; FatigueT1-T3; SleepinessT1-T3; PerformanceT1-T3	Sleep Protocol	10-point Likert scales. Sleep quality, restedness and performance ability: 1 = *very bad* to 10 = *very good*. Other scales: 1= *not at all* to 10 = *very*. T1 to T3 = (morning after) night 1 to 3.		(Carney et al., 2012)
Time of testing	TimeofTask	Lab session	Start time of the shooting task (in hours and minutes on a 24 hour scale)		
Time awake at moment of testing	TimeAwake	Lab session	Time awake (in minutes) at the start time of the shooting task.		

2018_PeerNieuw_SleepSSST_Accuracy.csv.

Concept	Item Names	Measurement time	Scale	Note
General	ParticipantID; Excluded; Group; Cue; Stimulus			See explanation in General table above.
Accuracy	CorrResp_sum; Resptarg_sum; CorrResp_perc	Lab session (shooting task)	Ratio correct responses (CorrResp_perc), based on number of correct responses (CorrResp_sum) relative to number of trials (Resptarg_sum) per task condition.	

2018_PeerNieuw_SleepSSST_SDT.csv.

Concept	Item Names	Measurement time	Scale	Note	Reference
General	ParticipantID; Excluded; Group; Cue			See explanation in General table above.	
Sensitivity (*d*') and response bias (β)	CorrResp_gun_sum; gun_Resptarg_sum; FA_phone_sum; phone_Resptarg_sum; Hitrate_gun; FArate_gun; Hitrate_gun_adj; FArate_gun_adj; dprime_gun; ratiobeta_gun; ln_ratiobeta_gun	Lab session (shooting task)	Sensitivity (dprime_gun) and response bias (ratiobeta, ln=log transformed) based on hit and false alarm rates (Hitrate_gun and FArate_gun), which indicate the ratio of responses (#CorrResp_gun_sum and #FA_phone_sum) relative to the total number of gun or phone trials (gun_Resptarg_sum or phone_Resptarg_sum), respectively. _adj = adjustment for extreme rates (1 or 0).	See reference for formulas for calculation of *d*' and β.	(Stanislaw & Todorov, 1999)

2018_PeerNieuw_SleepSSST_RT.csv.

Concept	Item Names	Measurement time	Scale	Note
General	ParticipantID; Excluded; Group; Cue; Stimulus			See explanation in General table above.
Response Times	Trialnr; RT	Lab session (shooting task)	Response times (in milliseconds) on Go (gun) and NoGo (phone) single trials. Trialnr = chronological trial number.	

2018_PeerNieuw_SleepSSST_SSRT.csv.

Concept	Item Names	Measurement time	Scale	Note	Reference
General	ParticipantID; Excluded; Group; Cue			See explanation in General table above.	
Stop Signal Reaction Time (SSRT)	FAstop; Stoptrials; StopRespondrate; SST_mean; RT_prctl; SSRT_prctl;	Lab session (shooting task)	SSRT (in milliseconds) per Cue condition, based on the mean SSD (SST_mean, in ms) and the percentile score of the response times (RT_prctl, in ms). The Stop-response probability (StopRespondrate) is the ratio of false alarms (unsuccessful stopping) on stoptrials (FAstop) relative to the total number of stop trials (Stoptrials).	Higher SSRT indicates decreased response inhibition.	SSRT calculation, integration method: (Verbruggen, Chambers, & Logan, 2013)

2018_PeerNieuw_SleepSSST_ExitQuestionnaire.csv.

Concept	Item Names	Measurement time	Scale	Reference
General	ParticipantID; Excluded; Group; Cue		See explanation in General table above.	
Subjective ratings threat	Opponent_ID; Opponent_ID_correct; Unpleasantness_sound (_begin/_end); Certainty; Motivation; Valence; Arousal; Dominance	Lab session (after shooting task)	OpponentID = opponent associated with low or high threat in the shooting task (opponent 1 or 2). OpponentID_correct: Identification of low and high threat opponent by self-report: 0 = incorrect, 1 = correct. Unpleasantness of the sounds, certainty, and motivation are scored on 9-point Likert scales (1 = *not at all* to 9 = *very*). Valence (1 = *pleasant* to 5 = *neutral* to 9 = *unpleasant*), Arousal (1 = *aroused* to 9 = *calm*) and Dominance (1 = *being controlled* to 9 = *in control*) are scored with Self-Assessment Manikins (SAM) scales (see reference).	(Bradley & Lang, 1994) ExitQuestionnaire_Dutch.pdf

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