SI2 - Supporting information

1-back task fMRI protocol

The following procedure and parameters were used for the 1-back visual working memory task.

1-back Task description

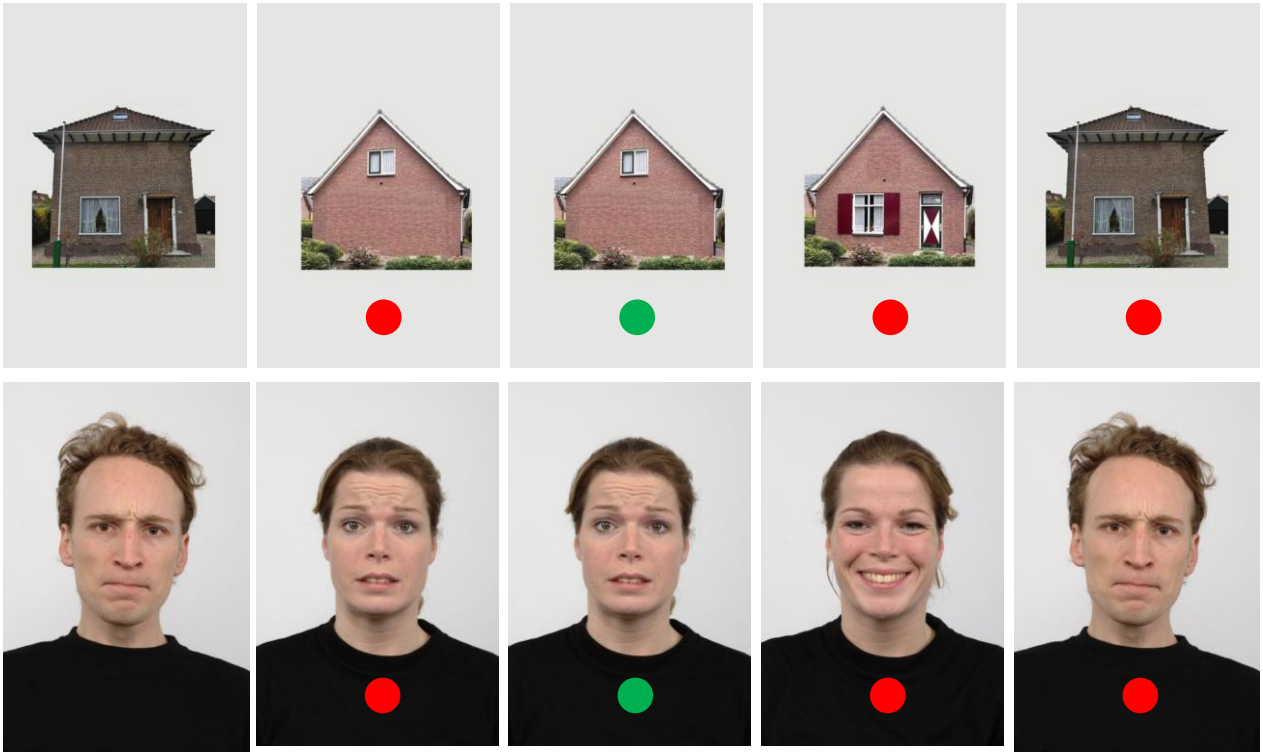
The 1-back task looks at processing complex stimuli: social and non-social. The non-social complex stimuli are homes, the social complex stimuli are faces.

The participant should not remember one specific house / face, but consider whether two photos in a row are exactly the same. The participant should remember, not only the identity of the house / face, but also the specific feature (house: upper or lower adjusted / face: emotion angry, happy, fear).

Participant is instructed to press the “yes” button if the picture he/she are seeing is an exact copy of the previous one, and press the “no” button otherwise.

Here an example:

Sequentially (from left to right) the pictures are displayed as below. Red dots means what the participant should respond when he/she sees that very picture. The task alternates randomly between the houses and the faces (see next paragraph).



Task procedure

Before the participant goes into the scanner, the task will be practiced outside the scanner. The participant has already had extensive instructions (and practiced with the task) outside the scanner. The instructions in the scanner must therefore be limited to the literal instructions of the task as shown on the screen.

- During the anatomical scan, the participant can read the instructions on screen again.

- Before starting the fMRI scan: Read the instructions on the screen literally with the participant and see if he / she has any questions.

- Start the fMRI scan if the participant does not have any questions the fMRI scan. The task will then automatically start and run with the scan.

Note: If the participants wants feedback: Indicate that you cannot give it now because everything needs to be analyzed first and only if a group of people has been tested.

Task design

Below, the schedule for displaying the picture used for the 1-back visual task (1-minute period and at 50% task duty cycle).

8 min 1-back																	
minuut	*1*		*minuut*	*2*		*minuut*	*3*		*minuut*	*4*		*minuut*	*5*		*minuut*	*6*	
H28	1500 ms		F72	1500 ms		H37	1500 ms		H17	1500 ms		F41	1500 ms		H2	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H30	1500 ms		F72	1500 ms		H40	1500 ms		H17	1500 ms		F64	1500 ms		H2	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H30	1500 ms		F80	1500 ms		H40	1500 ms		H10	1500 ms		F3	1500 ms		H2	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H30	1500 ms		F80	1500 ms		H1	1500 ms		H12	1500 ms		F2	1500 ms		H6	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H43	1500 ms		F37	1500 ms		H3	1500 ms		H33	1500 ms		F2	1500 ms		H6	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H43	1500 ms		F38	1500 ms		H9	1500 ms		H36	1500 ms		F2	1500 ms		H22	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H25	1500 ms		F38	1500 ms		H41	1500 ms		H39	1500 ms		F9	1500 ms		H23	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H27	1500 ms		F55	1500 ms		H8	1500 ms		H53	1500 ms		F9	1500 ms		H16	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H44	1500 ms		F55	1500 ms		H8	1500 ms		H54	1500 ms		F10	1500 ms		H31	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H44	1500 ms		F67	1500 ms		H4	1500 ms		H54	1500 ms		F79	1500 ms		H20	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H34	1500 ms		F67	1500 ms		H5	1500 ms		H54	1500 ms		F5	1500 ms		H21	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H34	1500 ms		F67	1500 ms		H45	1500 ms		H13	1500 ms		F8	1500 ms		H21	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H34	1500 ms		F34	1500 ms		H45	1500 ms		H15	1500 ms		F66	1500 ms		H21	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H7	1500 ms		F34	1500 ms		H51	1500 ms		H26	1500 ms		F50	1500 ms		H49	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
H7	1500 ms		F33	1500 ms		H47	1500 ms		H26	1500 ms		F75	1500 ms		H49	1500 ms	
P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms		P0	500 ms	
P0	30.000 ms		P0	30.000 ms		P0	30.000 ms		P0	30.000 ms		P0	30.000 ms		P0	30.000 ms	

	minuut	*7*		*minuut*	*8*
	F69	1500 ms		F6	1500 ms
	P0	500 ms		P0	500 ms
	F14	1500 ms		F6	1500 ms
	P0	500 ms		P0	500 ms
	F15	1500 ms		F43	1500 ms
	P0	500 ms		P0	500 ms
	F15	1500 ms		F43	1500 ms
	P0	500 ms		P0	500 ms
	F40	1500 ms		F45	1500 ms
	P0	500 ms		P0	500 ms
	F17	1500 ms		F25	1500 ms
	P0	500 ms		P0	500 ms
	F17	1500 ms		F28	1500 ms
	P0	500 ms		P0	500 ms
	F17	1500 ms		F28	1500 ms
	P0	500 ms		P0	500 ms
	F18	1500 ms		F28	1500 ms
	P0	500 ms		P0	500 ms
	F48	1500 ms		F31	1500 ms
	P0	500 ms		P0	500 ms
	F48	1500 ms		F32	1500 ms
	P0	500 ms		P0	500 ms
	F56	1500 ms		F32	1500 ms
	P0	500 ms		P0	500 ms
	F21	1500 ms		F76	1500 ms
	P0	500 ms		P0	500 ms
	F22	1500 ms		F76	1500 ms
	P0	500 ms		P0	500 ms
	F63	1500 ms		F51	1500 ms
	P0	500 ms		P0	500 ms
	P0	30.000 ms		Einde eer	30.000 ms

H = House picture; F = Face picture; P0 = Rest