***Schizotypal Personality Questionnaire***

*Schizotypal* *traits* were assessed with the Greek version (Tsaousis, Zouraraki, Karamaouna, Karagiannopoulou, & Giakoumaki, 2015) of the Schizotypal Personality Questionnaire (SPQ; Raine, 1991). The SPQ is a 74-dichotomous-item questionnaire and items are grouped into nine subscales that are organized into four schizotypal factors according to the four-factor model. The four-schizotypal factors are termed cognitive – perceptual (including odd beliefs/magical thinking and unusual perceptual experiences), paranoid (including ideas of reference, suspiciousness and social anxiety), negative (including suspiciousness, social anxiety, lack of close friends and constricted affect) and disorganized (including eccentric/odd behavior and odd speech). Subscale scores are derived by summing the positive responses of the items included in each subscale and scores for each schizotypal factor are calculated as the sum of the respective subscale scores.

***Neuropsychological tasks***

*Working Memory (WM) and Affective Working Memory (AWM):* WM was assessed with a computerized version of an N-back sequential letter task (Giakoumaki, Roussos, Pallis, & Bitsios, 2011). Letters were presented in the center of the computer screen sequentially and the task consisted of four conditions: in the 0-back condition participants were asked to respond by pressing a touch-pad when letter “X” was presented; in the 1-back condition, participants were asked to press the touch pad when any letter was preceded by the identical one; in the 2-back and 3-back conditions, participants had to respond by pressing the touch-pad when any letter was preceded by the identical one in the preceding 2 and 3 trials, respectively. A series of 56 letters (14 letters/condition; 3 targets/condition) was presented with each letter appearing on the screen for 1 sec. Outcome variables were the number of correct responses and commission errors (i.e. responses in the absence of target letter) per level of difficulty.

AWM was assessed with a computerized N-back task that included images from the International Affective Picture System (IAPS; Lang & Bradley, 2005). The images were presented on the computer screen for 500 msec and each image was followed by a blank screen for 1500 msec. The task consisted of three conditions: in the 1-back condition, participants were required to press a touch pad when an image was identical to the preceding one; in the 2-back and 3-back conditions, participants were required to press the touch pad when the image presented on the screen was identical to the one in the preceding 2 and 3 trials, respectively. In the 2- and 3-back conditions, identical images were separated by an image (“distractor image”) of the same valence (e.g. pleasant image A – pleasant distractor – pleasant image A). In all conditions, paired images were separated by neutral distractor images (e.g. pleasant image A – pleasant distractor – pleasant image A – neutral distractor – unpleasant image A – unpleasant distractor – unpleasant image A). Thus, a series of 160 images were presented; each condition included 4 targets/valence[[1]](#footnote-1) and the remaining images served as either within[[2]](#footnote-2)- or between[[3]](#footnote-3)-target distractors. Normative arousal ratings (mean±SD) for the selected target-images were 5.35±0.82 for pleasant images, 2.59±0.50 for neutral images and 5.55±0.93 for unpleasant images, as per the V-shaped expected pattern. Outcome variables were the number of correct responses and commission errors per valence in each level of difficulty.

*Complex Selective Attention (CSA) and Complex Affective Selective Attention (CASA):* CSA was examined with a pencil-paper version of the Stroop task (Golden, 1978). The task consists of three conditions, each one lasting for 45 sec. In the first condition, participants were asked to read the names of colors written in black ink (Word score), in the second condition they were asked to name the color of patterns (XXXX) written in colored ink (Color score) and in the third condition participants were asked to name the color of the ink that was mismatched to a word (e.g. the word red printed in green ink is identified as green; Color-Word score). The outcome variable was the interference score: a “predicted Color-Word score” was calculated [i.e., word score x color score / word score + color score] and this was subtracted from the actual Color-Word score. Thus, higher scores indicate lower interference.

CASA was examined with a modified computerized version of an affective Stroop task (Genov, Shay, & Boone, 2002). Forty-five colored words were randomly and sequentially presented in a 4-color palette circle in the center of the computer screen and participants were required to select the color of the ink that the word was written from the palette. The words fell into three categories, i.e. pleasant, unpleasant and neutral[[4]](#footnote-4). Outcome variables were the correct responses per category of words.

*Response Inhibition (RI) and Affective Response Inhibition (ARI):* RI was evaluated with the Stop-Signal task, included in the Cambridge Automated Neuropsychological Test Automated Battery (CANTAB; Robbins et al., 1998). A white ring is presented in the center of the computer screen and after a 500 msec delay period, a white arrow pointing either to the right or to the left is presented within the ring. In the first part of the task, participants were required to press the right-hand button of a touch pad when the arrow pointed to the right or the left-hand button of the touch pad, when the arrow pointed to the left. In the second part of the task, consisting of five blocks with 64 trials each, participants were required to do the exact same thing unless they heard an auditory stimulus. In these trials, they were required to withhold their response. Outcome variables were (a) correct responses in the “stop condition” (i.e., when participants were required not to respond), (b) correct responses in the “go condition” (i.e., when participants were required to press either the right- or the left-hand button of the touch pad according to the direction of the arrow), (c) errors in the “stop condition” (i.e., participants pressed the button of the touch pad that did not match the direction of the arrow in trials with the auditory stimulus) and (d) errors in the “go condition” (i.e., participants pressed the button of the touch pad that did not match the direction of the arrow in trials without the auditory stimulus).

ARI was evaluated with the Affective Go/No-go task of CANTAB. The task consisted of 20 blocks (2 practice and 18 testing blocks) in which words (with pleasant, unpleasant or neutral meaning) were sequentially presented for 300 sec (inter-stimulus interval: 900 msec) in the center of the screen. For each block, a “target word category” and a “distracter word category” were pre-defined (e.g. when the target category was the pleasant words, the distracter category included neutral words). Participants were required to press a touch-pad when words belonging to the target category were presented and to withhold responding to distracting words. Outcome variables were the total number of correct responses and total number of commission errors.

*Decision Making (DM) and Affective Decision Making (ADM).* DM was examined with the Stockings of Cambridge (SoC) task, which is also part of CANTAB. Participants were required to compare two different arrangements of “balls” in “socks” (one arrangement was presented on the top half of the screen and the other arrangements was presented at the bottom half of the screen) and re-arrange (making the minimum possible number of moves) the balls in the lower half in order to match the target arrangement in the upper half. The problems were of increasing difficulty (2-, 3-, 4- and 5-moves problems). Participants were instructed to plan the complete sequence of moves required prior to their first move. Outcome variables were (a) number of problems solved correctly with the minimum moves, (b) mean number of moves, (c) mean initial thinking time (i.e., the time taken to organize the solution of the problem prior to execution of the first move) and (d) mean subsequent thinking time (i.e., the time required for completely solving the problem).

ADM was examined with the Iowa Gambling task (IGT; Bechara, Damasio, & Damasio, 2000; Bechara, Damasio, Damasio, & Anderson, 1994). In a total of 100 trials, participants were required to select one card at a time from four decks of cards (A, B, C, D) that were displayed on the computer screen in order to gain “pretend” money. Decks A and B were associated with high monetary rewards but at the same time with high monetary losses (“disadvantageous decks”) while decks C and D had both lower rewards and lower penalties (“advantageous decks”). This information was disclosed from the participants, though. Every card selection was accompanied by the win and/or loss outcome appearing explicitly on the screen. Outcome variables were (a) the total numbers of cards selected from decks C and D minus the total numbers of cards selected from decks A and B (i.e. high scores indicate superior performance) and (b) total money won.

*Fluid Intelligence (FI) and Emotional Intelligence (EI):* FI was assessed with Raven’s Progressive Matrices (RPM; Raven, Raven, & Court, 2003). The task comprised five sets of 12 abstract patterns, each with one missing piece. Participants were required to select the choice that best matched the pattern out of the possible answer choices. Items within a set were of increasing difficulty. Outcome variable was the total number of correct responses.

EI was assessed with the Greek Emotional Intelligence Scale (GEIS; Tsaousis, 2008). The scale consists of 52 items scored in a 5-point Likert scale, with higher scores indicating higher emotional intelligence. Items are organized into four subscales (namely expression and recognition of emotions, control of emotions, use of emotion for facilitating thinking, caring and empathy) that yield a total score; the latter was the outcome variable in the present study.

***Self-Assessment Manikin***

The Self-Assessment Manikin (SAM; Bradley & Lang, 1994) was administered after completion of the AWM task for participants to rate their “pleasure” and “arousal” after viewing each image. The scale consists of a human-like figure who (a) has a face ranging from smiling/happy to frowning/unhappy (assessment of pleasure) and (b) expresses its enthusiasm, ranging from over-excitement to sleepiness (assessment of arousal). Both dimensions are rated on a 9-point likert scale, with higher scores indicating higher levels of pleasure or arousal.

***Visual Analogue Scales***

Upon arrival at the lab, participants self-rated their mood and feelings on a battery of 16-item visual analog scales (VAS; Norris, 1971) of 10 cm each. The raw values of each item were weighted with the respective factor loading and the weighted values were allocated into alertness, anxiety, and discontentment factors (Bond & Lader, 1974). Scores for each VAS factor were calculated as the average of the respective weighted values.

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1. IAPS numbers of neutral target- images: 2980, 5390, 7026, 7175 (1-back condition); 7001, 7010, 7150, 7235 (2-back condition); 7004, 7012, 7040, 7090. IAPS numbers of pleasant target-images: 1630, 1710, 2216, 7200 (1-back condition); 1750, 5621, 7260, 7330 (2-back condition); 5480, 5833, 7430, 8501 (3-back condition). IAPS numbers of unpleasant target – images: 1030, 1050, 1270, 2682 (1-back condition), 1275, 1930, 2695, 6020 (2-back condition); 1090, 1274, 6230, 7361 (3-back condition). [↑](#footnote-ref-1)
2. IAPS numbers of neutral within-target distractor images: 7021, 7030, 7081, 7211 (2-back condition); 7018, 7042, 7044, 7054, 7190, 7236, 7242, 7354 (3-back condition). IAPS numbers of pleasant within-target distractor images: 7282, 7289, 7481, 7482 (2-back condition); 1410, 5831, 7351, 7352, 7410, 7470, 7480, 7530 (2-back condition). [↑](#footnote-ref-2)
3. IAPS numbers of neutral between-target distractor images: 5531, 7043, 7045, 7061, 7062, 7130, 7186, 7207, 7287, 7512, 7513, 7546 (1-back condition); 6150, 7002, 7003, 7009, 7017, 7036, 7052, 7055, 7170, 7300, 7500, 7547 (2-back condition); 5530, 7025, 7035, 7038, 7050, 7053, 7140, 7161, 7179, 7205, 7224, 7233. [↑](#footnote-ref-3)
4. List of pleasant words: calm, euphoric, nostalgic, cheerful, joyful, optimistic, excited, enthusiastic, energetic, grateful, compassionate, trustful, honored, respected, dignified, devoted, understanding, proud. List of unpleasant words: disgusted, desperate, disappointed, bitter, painful, angry, sad, lonely, grief-stricken, ashamed, terrified, despised, guilty, scorned, jealous, envy, hurt, rejected. List of neutral words: quantity, newspaper, combine, permit, borders, notebook, warehouse, restaurant, engine. [↑](#footnote-ref-4)