Introductory Text for Study 1

In the disease (city) environment in Study 1, participants were presented with the following introductory text.

Dear participant, thank you for participating at this study. In the first part of the study, which consists of two parts, we are interested in how much people know about health risks (geographical facts). You will be presented with a number of judgment tasks. There will be additional tasks in the second part. All tasks will be presented on the computer. You will now be given some general information about the tasks. In the first part, the tasks concerns infectious diseases (American cities).

Battery of Psychometric Tests

In Study 1, three psychometric tests were administered to all participants. The tests assessed verbal knowledge (spot a word; Lindenberger, Mayr, & Kliegl, 1993), processing speed (digit symbol substitution, Lindenberger et al., 1993), and episodic recognition memory (Shing, Werkle-Bergner, Li, & Lindenberger, 2008). In Study 2, and in addition to the three tests, participants completed a second measure of processing speed (identical figure task; Lindenberger et al., 1993) and two inhibitory function measures (Stroop task; Stroop, 1935; Flanker task; Eriksen & Eriksen, 1974). We provide a detailed description of all tests below.

Verbal knowledge

Spot-a-word. Twenty items containing one word and four pronounceable nonwords
were presented successively on the screen. The task of the participants was to touch the word on the screen. Three practice items were provided. The total number of words correctly identified was the dependent measure (Lindenberger et al., 1993).

*Processing speed*

*Digit symbol substitution.* Participants had to follow a scheme relating a set of symbols to digits by writing below rows of digits as many symbols as possible within 90 s. A paper-and-pencil format was used (Wechsler, 1981). The dependent variable was the total number of correct answers.

*Identical pictures.* In this task, 32 items were presented. For each item, a target figure was presented in the upper part of the screen and five possible responses were shown in the lower part. As quickly as possible, participants had to touch the lower figure that matched the target figure. Testing ended after 80 s. The dependent variable was the total number of correct answers (Lindenberger et al., 1993).

*Inhibitory control*

*Stroop.* The verbal Stroop task (Stroop, 1935) consisted of three conditions (incongruent: naming words in incongruent color; congruent: naming words in congruent color; neutral: naming words in neutral (white) color. Each trial began with a fixation stimulus displayed for 500 ms. The screen went blank for 500 ms, and then the stimulus appeared (word). The stimulus was displayed on a black background and remained on the screen until the participant responded. The dependent variable was obtained by calculating the difference between the median reaction time for the incongruent minus the median reaction time for the congruent trials.

*Flanker.* The color version of the Eriksen-type flanker task (Eriksen & Eriksen, 1974) consisted of two stimulus-response alternatives and a neutral condition. Each trial began with the presentation of a central gray fixation cross for 500 ms. After a blank interval of 500 ms, the stimulus appeared, a red or green circle of about 0.7 cm in diameter. The target circle was
surrounded by four flanker circles, 1 cm above and below and to the left and right (center to center). In compatible trials, the four flankers had the same color as the target, whereas in incompatible trials they had the color of the alternative target. In neutral trials, their color was blue, a color that was not assigned to any response. Participants were instructed to respond as fast as possible to the color of the central target by pressing one of two keys on the response pad. The dependent variable was obtained by calculating the difference between the median reaction time for the incongruent minus the median reaction time in the congruent trials.

As in Li et al., 2004, each participant’s scores on the flanker and Stroop tasks were combined into a composite score. This composite score was calculated as the sum of the z-standardized individual scores on the flanker and the Stroop tasks.

**Episodic Recognition Memory**

We used the German version (Shing et al., 2008) of an episodic recognition memory task, consisting of two subtasks: item recognition and associative recognition (Naveh-Benjamin, 2000). The encoding phase was the same for both tasks: 45 pairs of word pairs were presented sequentially on the computer screen, with each word being presented for six seconds. After the encoding phase, participants counted backward by threes for 90 seconds as an interpolated activity. In the recognition phase, 60 memory probes were presented consecutively on the computer screen and participants were instructed to decide whether they had seen each probe at the encoding phase (old/new judgment). In the test phase of the item recognition task, single words were presented as probes. Half of the probes consisted of old words drawn from the study pairs and the other half consisted of new words never seen before during the experiment. In the test phase of the associative recognition task, pairs of words were presented as probes. Half of the pair probes were intact pairs from the encoding phase (i.e., an exact replication of the pair as seen during study). Fifteen probes were rearranged pairs, composed of words taken from different study pairs at encoding, and the remaining 15
probes were totally new pairs, composed of words that never appeared at encoding. Participants were instructed to indicate “old” to intact pairs and “new” to both rearranged and new-new pairs. For both the item and the associative recognition tasks, participants had up to five seconds to respond to each probe.
References


