

Cover Page for Study Protocol Document

Official Study Title: What makes people better at describing photographs?

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## Materials

For the mindful breathing exercise, a 10 min segment from “Guided Meditation Journey into Body Sensations” (retrieved from <https://youtu.be/1cPWV0Sgwi8?t=172>) was used. It aimed to bring participants into a mindful state via a guided breathing exercise. For the control condition, an alternative 10 min clip, “Zen – Jerome Bixby” (retrieved from [https://youtu.be/zUKR\\_3WrE-Y](https://youtu.be/zUKR_3WrE-Y)) was played for participants instead of the guided meditation clip. For comparability with the breathing exercise, the clip includes sound accompanied by a still picture only (i.e., without a moving visual component). Both clips were used in Van Wagenen's (2022) study. As a manipulation check, each participant was given a single 4-point Likert scale item question asking: *“How mindful do you feel right now?”* (1 = *not at all mindful*; 4 = *very mindful*) which was presented after the clips and again after the participant completed the picture description task.

Speech fluency was measured from a picture description task that included photographs similar to those used by Castro and James (2014). Three pictures were taken from the Open Affective Standardized Image Set (OASIS; Kurdi et al., 2017; <https://db.tt/yTZYCga>) and shown to both the intervention and control groups. Three pictures used were: “car crash,” which depicts two cars that have collided with each other and policemen walking around in the background; “cemetery,” which presents a scene in which a woman is seen kneeling down in front of a gravestone and American flags are planted throughout the cemetery; and “couple,” which shows a couple sitting on a bench overlooking a lake with the man facing the lake and the woman sitting with her back turned toward the man, facing the camera, and appearing to be upset (OASIS pictures labeled Car Crash 3, Cemetery 5, and Couple 3; Kurdi et al., 2016). These pictures have ratings data indicating they have negative content, which has been shown to increase disfluencies during picture description tasks (Castro & James, 2014).

A consent form outlining general information as well as risks and benefits of the current study, and the option for withdrawal from the study, was provided to each participant. A fill-in demographics

questionnaire assessing race/ethnicity, education level, age, and gender was used. Additionally, participants' English vocabulary knowledge was assessed using the Shipley (1940) Vocabulary Test. This test contains a total of 40 vocabulary words that participants pair with the corresponding synonym from the four choices given for each word. Finally, a debriefing sheet containing information about the true purpose of the study was used.

### **Procedure**

The study was approved by the UCCS Institutional Review Board. Recruitment took place via the UCCS psychology department SONA system research pool, by distributing flyers throughout the community, and via Research Match ([www.researchmatch.org](http://www.researchmatch.org)) to recruit a wide variety of participants.

Each participant was randomly assigned to either the control ( $N = 32$ ) or intervention group ( $N = 31$ , after excluding the person who did not meet the age inclusion criterion) and given the consent form. Next, the participant saw either the mindful breathing or control clip and then was administered the single question mindfulness measure. Then, each participant was instructed to describe each picture during a 30 – 60 s time frame with research assistants prompting the participant to add more details if they spoke for fewer than 30 s. The three pictures were presented in random order for each participant. Following Van Wagenen (2022), the participant's hand gesturing during the speech fluency task was restricted using an empty water bottle that the participant held with both hands in camera view for the duration of the picture description task. Immediately after the picture description task, mindfulness was re-measured using the 4-point Likert scale.

The first part of the study was conducted via video conference through Zoom, and it was completed within 30-40 min. The researcher carefully monitored each participant's hand gesturing throughout the picture description task and ensured they did not engage in other distracting activities (e.g., leaving the room, using their phone, watching videos, or eating) via the webcam. The researchers carefully read the instructions verbatim from a script and monitored the participant throughout the

video call. If necessary, notes were taken to describe any testing situation deemed as “different” based on the participant’s behavior or other events (e.g., not looking at the screen; looking around as a sign of distraction; interruptions to testing). The picture description task was audio recorded (with the participant’s consent) and was later transcribed to score speech fluency.

After the picture description task, the participant was directed to complete a series of questionnaires and scales on their own via Qualtrics. This information and further instructions were provided by the researcher at the Zoom meeting. The questionnaires included demographic information as well as the Shipley (1940) Vocabulary Test. Additionally, the State-Trait Anxiety Inventory (STAII; Spielberger, 1983), the Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al., 2004), and the Applied Mindfulness Process Scale (AMPS; Li et al., 2016) were administered. These scales will be used as part of a larger study including older adult participants and were not analyzed as part of the current project. These scales required about 10-20 min to complete in total. Finally, a debriefing with an explanation of the true nature of the study was given to each participant.