

Dataset of standardized full-body video stimuli featuring Central European women and men: Attractiveness of Fitness Project

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data-descriptor

Keywords:

Posted Date: March 8th, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-8374536/v1>

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Additional Declarations: No competing interests reported.

Abstract

Perceivers form judgments of others based on an interplay of facial, bodily, and dynamic cues, yet most standardized stimulus sets remain restricted mostly to static facial images. To address this gap, we present a comprehensive dataset of 120 high-quality audiovisual recordings depicting men and women from Central Europe, capturing natural body morphology (faces blurred) and motion under standardized conditions, meeting the need for a highly standardized, transparent, reproducible, and publicly accessible stimulus set. The collection provides coverage of static, dynamic, and acoustic cues, with rigorous protocols for lighting, color calibration, and action structure. This dataset enables reproducible research on social perception and first-impression formation, supporting cross-disciplinary work across various psychological domains. Its transparent methodology and compatibility with independent anthropometric and physical fitness data enable both hypothesis-driven and exploratory investigations into how human appearance relates to social judgments and broader behavioral outcomes. By establishing strong standards for documentation and reproducibility, this open resource offers a new benchmark for future stimulus development and data collection efforts.

Background & Summary

Humans tend to evaluate others based on their appearance. In psychological science, visual stimuli, such as photographs and videos of faces and bodies, are routinely used to investigate impression formation, trait inference, and related phenomena. High-quality, standardized stimuli datasets are therefore indispensable resources¹, but see ^{2,3} for researchers seeking to address a diverse array of research questions.

Researchers interested in static facial appearance have a variety of standardized stimulus sets to choose from. For example, resources such as Karolinska Directed Emotional Faces⁴, The Chicago Face Database⁵, the Face Research Lab London Set⁶, Radboud Face Database⁷, or the Boğaziçi Face Database⁸ are well-renowned and provide standardized, high-resolution photographs of men's and women's faces, along with norming data on a range of traits for tasks in face perception, facial expression, social judgment, and related areas. However, these collections are frequently limited to static, frontal facial images, omitting the body appearance and dynamic motion cues.

Although some databases of full-body images are now available^{e.g., 9,10}, researchers interested in body morphology lack a comparable selection of high-quality, standardized stimuli. This gap is critical as a growing body of evidence suggests that body shape and posture meaningfully influence social judgments and first impressions beyond the face alone. For example, research demonstrates that people form first impressions of personality from body shape¹¹ and highlights the importance of body information for key social impressions made from full-body (i.e., whole-person) images^{12,13}.

Furthermore, static photographs of faces or bodies cannot capture temporal dynamics, which have received less attention in the person perception literature, but which nonetheless can importantly inform

impressions. For example, people form impressions of both transient states and stable attributes from body motion, including emotion¹⁴, personality¹⁵, sex¹⁶, sexual orientation¹⁷, and identity¹⁸. Much of the work on body motion, however, has used stimuli such as point-light walkers that separate body motion from appearance/morphology. Of course, in daily life, body morphology and movement are not separable; they are perceived simultaneously. Researchers may therefore require more ecologically valid stimuli to address their research questions. As such, the field requires high-fidelity, reproducible video datasets that integrate bodily morphology with motion.

Several full-body and video stimulus resources have been developed. Keefe et al.¹⁹ introduced a database of high-definition videos of actors performing whole-body actions, and Georgiev et al.²⁰ released a set of object-oriented action videos validated for psychometric research. Christensen et al.²¹ provided a set of full-body dance movements expressing discrete emotions, while SocialVidStim²² offers social-valence clips for neuroscience and behavioral studies. Despite their value, these resources face recurring limitations: narrow morphological diversity (often only one or a few actors), stylized or task-specific movements (e.g., dance, object manipulation), lack of high-fidelity resolution and calibrated color, and incomplete documentation that prevents comparability, reproducibility, and reusability. Recent work has shown that subtle variations in recording protocols (e.g., inconsistent lighting, background variation, or undocumented camera settings) can introduce confounds in visual stimuli, raising concerns about reproducibility²³.

Here, we introduce a new video stimulus dataset designed to bridge these methodological and conceptual gaps of existing visual resources. The collection comprises 120 video stimuli of male and female bodies in motion (with faces blurred), captured under standardized, replicable conditions. This resource is intended to advance reproducibility in social-perception research by providing a flexible yet rigorously documented set of stimuli suitable for studies on social perception, including attractiveness, physical fitness inference, and related first-impression processes. Standardized, transparent, and publicly available datasets encompassing both static and dynamic depictions (with audio) of individuals are vital for conducting original studies, enabling cross-study comparisons, and facilitating secondary analyses. By focusing on a sample of young central European women and men with diverse physiques, the dataset provides a valuable foundation for cross-disciplinary research in social, psychological, neurocognitive, and behavioral domains. When integrated with anthropometric, body composition, and physical fitness measures reported²⁴, this dataset becomes an even more powerful resource with the potential to support a broad spectrum of investigations into the links between human appearance and social perception.

Methods

The present dataset was generated as part of a research project (i.e., Phase 1) focusing on attractiveness cues to physical fitness across perceptual modalities. In addition to audio-video recordings, the data collection included measures of physical fitness, questionnaires, and body odor

samples. The project and its data collection methods were pre-registered on the Open Science Framework (osf.io/pnr7q). Details of the physical fitness data can be found in Třebický et al.²⁴, and information on the attractiveness rating (i.e., Phase 2) can be found at osf.io/m2n5r.

The video recordings data collection took place from April to November 2024.

The Institutional Review Board (Faculty of Physical Education and Sports, Charles University) approved this work; all following methods were carried out in accordance with relevant guidelines and regulations.

Participants

We recruited 128 participants (63 men and 65 women; mean age = 25.4, SD = 5.83, range 18–40 yrs). The participants were mainly invited via social media advertisements (e.g., Facebook and Instagram; see the ad in the supplementary materials at osf.io/efd2m). They expressed their interest in participating by filling out an online form and were subsequently contacted with the available terms and further details about the data collection. The participants were reimbursed with 600 CZK (~ 24 EUR; equivalent to 2 hours of the average hourly wage in the nation's capital, Prague) and provided with their physical fitness status results (see example in the supplementary materials at osf.io/efd2m). The available budget for reimbursement and the project's time frame limited the sample size²⁵, and we adhered to the stopping rules as per our pre-registration (osf.io/pnr7q).

Procedure

All recruited participants signed an informed consent form upon arrival in the lab. They changed into the provided sportswear (dark grey mélange fitted short-sleeve t-shirts and black runner shorts; women were also provided with sports bras to wear under the t-shirt; Decathlon). Participants selected clothing sizes based on personal preference. At the same time, participants were provided with the necessary materials for subsequent body odor sampling. Body odor collection commenced first (not detailed in this article; see osf.io/pnr7q), followed by full-body video recordings and voice recordings (see below). This was followed by completing questionnaires (e.g., basic demographic data, fitness activities, partner status, self-perception; not detailed in this article, see osf.io/pnr7q). Next, they underwent a physical fitness assessment (anthropometry, body composition, flexibility, postural stability, muscle strength, aerobic capacity)²⁴.

After the session, participants were debriefed on the study's aims and provided with instructions on how to receive their monetary compensation and fitness test reports. The overall time spent participating averaged ~ 2 hours.

This article focuses solely on the audio-video recording and its methods.

Audio–video recording

All audio-video recordings were acquired on-site in a controlled laboratory environment (quiet room, 6.5 ×3.5 m) designed to minimize external sensory disturbances (auditory or luminance). To standardize lighting conditions and reduce variability in ambient illumination and color reflections, all windows were covered with blackout blinds, and overhead fluorescent lighting fixtures were turned off throughout data collection. Participants were recorded individually in front of a white paper backdrop (2.75 m wide).

Equipment and settings

For video capture, we used a full-frame digital video camera (Blackmagic Cinema Camera 6K) equipped with a 50 mm fixed focal length lens (Panasonic Lumix 50/1.8), with the manual exposure and capture settings detailed in Table 1.

Table 1
Camera manual exposure and capture settings

Type	Setting
Frame rate	24 fps
Shutter angle	180° (i.e., 1/48 sec shutter speed)
Aperture	f/4.0
ISO	400
White balance	5600 K
Tint	0
Resolution	6K, open gate (full 3:2 sensor readout)
Compression	Constant quality, Q0
File type	BlackMagic raw
We used an Amaran 300c LED light with a Fomei 150 cm parabolic softbox to ensure soft, even illumination. This light source was set to full power (Intensity: 100%) and a daylight color balance (5600 K; Hue: 180°, Saturation: 0%)	

Proper exposure was verified using a SEKONIC L-308DC DigiCineMate light meter before every session. To standardize and ensure consistent color fidelity across all recordings, a CALIBRITE ColorChecker Video calibration chart was captured at the start of each recording session for subsequent color calibration during post-processing.

Audio recordings were captured simultaneously using a RØDE NTG1 condenser shotgun microphone (frequency response: 20 Hz–20 kHz) with a windshield connected to a Zoom F3 field recorder. The microphone was positioned just out of frame but close enough to capture clean voice samples of the participant’s voice with minimal ambient noise. The recorder operated in 32-bit floating-point mode,

saving audio to lossless .WAV files at 48 kHz. Recording levels were kept constant and set to prevent clipping.

This equipment, setup, and settings were consistently used for all participants throughout the entire data collection period to maintain uniform, repeatable, and replicable audiovisual quality²³.

Studio Layout

Participants were recorded in a standardized studio setup designed to ensure consistency in framing, lighting, and color conditions across all sessions. To maintain consistent positioning and subject-to-camera distance, the participant stood at a marked point approximately 80 cm in front of a white photographic background.

The camera was placed in landscape orientation on a tripod at a distance of 450 cm from the participant (sensor plane Φ to participant's chest distance; verified with a laser range finder for each participant) and set at a height of 110 cm to capture a full-frontal view of the scene. These settings of the camera sensor size (full-frame, 36×24 mm), focal length (50 mm), and focusing distance (4.5 m) yielded a 3.24×2.16 m field of view (39.6° horizontal angle of view). The aperture setting (f/4.0) resulted in a depth of field of 0.84 m (0.38 m in front of and 0.46 m behind the focal plane).

The light source was mounted on a C-stand, positioned 400 cm from the participant, elevated to 220 cm, and angled downward at approximately 15° to ensure even illumination of the whole body without casting harsh shadows.

The microphone, mounted on a C-stand, was 220 cm above ground, 220 cm in front of, and offset 45° to the left of the participant. It was tilted approximately 15° downward, with the capsule aimed at the participant's upper chest to capture clear speech while remaining out of frame.

Participants' preparation and recording

Before the recording began, participants were asked to remove their shoes and socks and remain barefoot throughout the entire audiovisual session. They were also instructed to remove any accessories, if possible, including watches, necklaces, bracelets, and any visible jewelry. This was done to maintain visual uniformity and prevent potential visual distractions. Additionally, participants with long hair (i.e., long enough to use a hairband) were required to tie it back into a simple ponytail to keep their upper-body contours (e.g., the neckline) visible throughout the recording. Before filming began, each participant was briefed on the recording process and had a guided familiarization trial. The research assistant then helped them to memorize a pre-written sentence (see below), which they were asked to recite for the voice recording. They were encouraged to act naturally during the recording session.

The recording started with the research assistant loudly stating the participant's ID (to identify files and synchronize audio and video tracks). The participant then stood still for 10 seconds at a marked position in the center of the frame, maintaining a neutral facial expression and looking slightly above the camera

lens to create a natural gaze and head position. Following a visual cue from the camera operator, the participants turned 90° to their right and walked across the recording space, moving beyond the edge of the background (out of the camera's view). When they reached the edge, they turned again and returned to the marked center position in the frame. They stood still for another 10 seconds in a neutral pose. After another cue, the participant performed a 360° turn to the right, completing a full rotation at their own pace. Immediately after the turn, they were instructed to recite a short, pre-learned standardized sentence introducing themselves: *„Ahoj, jmenuji se Adam/Anna a jsem z Prahy. Rád/a tě poznávám.“* (English translation: *‘Hello, my name is Adam/Anna, and I am from Prague. Nice to meet you.’*). Once finished, the participant exited the recording area to the left (Fig. 1) on a final cue.

This entire recording procedure was repeated three times for each participant to ensure consistency and data quality (i.e., to capture one full recording with no errors or breaks). After completing the audiovisual recordings, participants completed the set of questionnaires and were then accompanied by an assistant to the physical fitness testing station.

Post-processing

All post-processing was performed in DaVinci Resolve Studio 19. Each participant's recording was processed into multiple standardized output cuts, varying in content and face visibility, for the subsequent rating phases (i.e., Phase 2) of the project. This article presents only full-length videos with obscured faces, per the institutional IRB's policy and approved informed consent. Each output was processed according to a standardized workflow. First, all collected media files were loaded into the DaVinci Resolve project (3840×2160, 24 fps, DaVinci Color Management), and audio and video files were synchronized. Separate DaVinci projects were created for each output type (full video, standing only, turning only, speaking only, walking in and out, and audio only; all with the face visible and face blurred). The initial standing phase with the participant ID was trimmed, and relevant sequences (e.g., standing sequence) were selected and kept in the timeline.

Since the camera captured a scene wider than the background, the area outside the background's border was cropped. Next, color calibration and translation into the Rec. 709 color space were performed in the Color module using the calibration shot taken at the beginning of each session. All video cuts were created twice: once with faces visible and once with faces blurred. The blur was applied using Power Masks covering the head and the Mosaic Blur effect (square cells with 100px frequency). Videos with sound were rendered and exported in QuickTime format with H.264 encoding at a target bit rate of 20,000 Kb/s, Rec. 709 color space, Gamma 2.4, a resolution of 3840 × 2160 at 24 frames per second, and linear PCM 24-bit audio at 48 kHz. The full video output cut is ~ 30 seconds long.

Data Records

Due to several instances of failure to record audio, of the 128 participants recorded (63 men and 65 women), the final sample consists of 120 valid videos: 59 women and 61 men.

The dataset includes the following video files (with faces obscured) for all 120 valid cases:

- full videos
- standing-only videos
- walking-in, turning, and walking-out videos
- speaking only videos
- audio recordings

Video files are in MPEG format, and audio files are in WAV format. Due to the overall file size, all video and audio files, but the full videos, are available on the Open Science Framework at 10.17605/OSF.IO/EFD2M in the *Stimuli dataset* folder. Full videos are available in a Zenodo repository at 10.5281/zenodo.17916925.

Technical Validation

In several cases, participants were unable to remove certain accessories (e.g., wristbands, necklaces, or watches) or chose not to remove them. See Table 1S in the *Stimuli dataset* folder for further details.

Standardization

Protocol followed established and valid guidelines^{23,26}, ensuring methodological rigor.

Usage Notes

The dataset is made available in an open-access repository (OSF, osf.io/efd2m) upon publication, in line with FAIR data principles. It includes full metadata, standardized protocol, and documentation (as detailed above) to support reuse in cross-disciplinary research.

In line with the FAIR data principles, this dataset is designed to be findable and accessible through a public data repository with assigned DOIs (10.17605/OSF.IO/EFD2M and 10.5281/zenodo.17916925) and accompanying metadata. To ensure interoperability, the dataset follows standardized measurement protocols and variable naming conventions. All variables are clearly documented in a machine- and human-readable format.

Declarations

Funding

Acquisition: Vít Třebický, Jitka Třebická Fialová, Jan Havlíček

Investigation: Vít Třebický, Jitka Třebická Fialová, David Stella, Agáta Kolingerová, Natálie Folbergerová

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Project Administration: Vít Třebický, Jitka Třebická Fialová

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Funding information

The Czech Science Foundation GAČR 23-05408S supported this work.

Ethics declarations

The Ethical Committee of the Faculty of Physical Education and Sports, Charles University, approved this work.

Competing interests

The authors declare no potential conflicts of interest concerning this article's authorship and publication. The results of the present study do not constitute an endorsement of any product, company, or manufacturer that might benefit from the results of the present study.

Use of generative AI disclaimer

While preparing an early draft, the primary author (VT) used Grammarly (6.8) and ChatGPT o1 to improve spelling, grammar, sentence structure, and paragraph flow. After using these AI tools, all authors (including native speaker) reviewed and edited the content as necessary.

Author Contribution

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Acknowledgement

We are grateful to all volunteers who participated in our study. We also thank Kateřina Roberts, PhD, and other research team members for helping organize, pilot, and collect the data.

Data Availability

The dataset is made available in an open-access repository (OSF, osf.io/efd2m) upon publication, in line with FAIR data principles. It includes full metadata, standardized protocol, and documentation (as detailed above) to support reuse in cross-disciplinary research. In line with the FAIR data principles, this dataset is designed to be findable and accessible through a public data repository with assigned DOIs (10.17605/OSF.IO/EFD2M and 10.5281/zenodo.17916925) and accompanying metadata. To ensure interoperability, the dataset follows standardized measurement protocols and variable naming conventions. All variables are clearly documented in a machine- and human-readable format.

Code Availability

No custom code was generated during the creation of this dataset and article.

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Figures



Figure 1

Recording scenes flow diagram