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Projects & Data

Personality and Emotions in Social Interactions – The PESI Project

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Abstract

In this paper, we introduce the PESI project for investigating the interpersonal dynamics of Personality and Emotions in Social Interactions. The final sample in this preregistered study consisted of 436 participants (218 dyads) who were on average 31.2 years old (SD = 14.0, Range: 16–75). The study consisted of three parts and used a multimethod assessment: In Part 1, participants filled out online self-reports of personality. In Part 2, participants interacted in dyads at zero acquaintance in the laboratory and filled out self- and partner-reports of various states. During the interactions, video and audio tracks were recorded simultaneously, allowing later video analyses of every participant. In Part 3, participants provided self-reports via a follow-up online questionnaire. Our aim is to encourage researchers to use the present ideas, open materials, and data to be inspired to conduct future research.

Keywords

personality, emotion, social interaction, interpersonal dynamics, multimethod assessment

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Relevance Statement

This article presents the PESI project for investigating the interpersonal dynamics of Personality and Emotions in Social Interactions and the PESI study including multimethod assessment, open science material, and a call to collaborate.

Key Insights

- The interpersonal dynamics of Personality and Emotions in Social Interactions
- The PESI project is presented
- The study consisted of three parts and used multimethod assessment
- Lab-based assessment via self- and partner-report, video- and audio-recordings
- Researchers are encouraged to collaborate and discuss research ideas

People involved in social interactions influence each other's thoughts, emotions, and behaviors (Back et al., 2011; Kenny et al., 2006). Personality traits, interpersonal behavior, and interpersonal perceptions of interaction partners may be important antecedents of emotional experiences and their social consequences. Extending previous research, within the Personality and Emotions in Social Interactions (PESI) project, our objective is to investigate the interpersonal dynamics of personality and emotions in social interactions. In the following, we introduce the theoretical rationale of the PESI project and an illustrative example on how to use the data from this project. We then present a detailed description of the PESI study we conducted to investigate the proposed mechanisms. Finally, we present further ideas and directions for future research questions. Importantly, we also provide open science material to the scientific community in the Open Science Framework. Our aim is to encourage researchers to use the present ideas, materials, and data and to be inspired to apply and extend our ideas in future research. Therefore, we also want to cordially invite researchers to collaborate.

Personality and Emotions in Social Interactions

Within the PESI project, we claim that emotional experiences in dyadic interactions and their social outcomes can never be fully understood without analyzing the perspectives of both individuals. For example, social emotions are not experienced by only the person who feels the emotion but are also directed at and received by the interaction partner. We argue that the personality traits of *both* interaction partners specifically influence emotional experiences in social situations. Considering the mechanisms underlying this link, personality may have an effect on emotional experiences through the appraisal of the situation or through observable behaviors. With respect to the social consequences of emotional experiences, we also focus on the interpersonal reactions of interaction partners and want to explain them by the (observable) expression of the emotion. Addi-

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tionally, we want to emphasize that the proposed effects do not apply to all people in the same way but are moderated by individual differences.

The PESI project was funded by a grant to study the interpersonal dynamics of the social emotion of envy. Envy is a comparison-based emotion that arises when a person realizes that someone else has something that the person longs for, strives for, or desires (Smith & Kim, 2007). Accordingly, the theoretical framework and the study are built around the idea that two individuals engage in a social situation by facing a social comparison – with one person encountering an upward comparison, for example, by perceiving the other as superior or performing better, and the other one encountering a downward comparison, for example, by perceiving the person as inferior or performing poorly. In the following, we present some ideas pertaining to the emotion of envy in order to provide an illustrative example on how to potentially use the present data. Importantly, this conceptualization does not limit the breadth of emotions that could and should be studied within PESI, as social comparisons are part of many social interactions and play a role in multiple emotions (e.g., in envy, shame, worry, happiness; Smith, 2000). Furthermore, the broader theoretical framework of the PESI project is in line with common component approaches of emotional processes (e.g., Gross, 2015), and with contemporary work on personality dynamics (see Rauthmann, 2021 for an overview) that has used similar research paradigms (e.g., Geukes et al., 2019) and similar methodological approaches (e.g., Kenny et al., 2006), and has proposed related interpersonal models on personality and social interaction processes (e.g., Back et al., 2011; Hopwood, 2018; Hughes et al., 2021).

An Illustrative Example: The Interpersonal Dynamics in Envy

Experiences of Envy Are Linked to Personality Traits of Both Interaction Partners

People differ from each other in how they evaluate social comparisons (Lockwood & Matthews, 2007), and these individual differences can be explained by personality traits (e.g., Wayment & Taylor, 1995). For example, previous research suggests that individual differences in stable tendencies to experience envy (dispositional envy; Rentzsch & Gross, 2015) influence the momentary experience of envy (state envy) following an upward comparison. Furthermore, people low in self-esteem and high in comparison orientation are especially sensitive to upward comparisons (Wayment & Taylor, 1995), which apparently also entails the risk of an intense emotional response (see Figure 1, path a).

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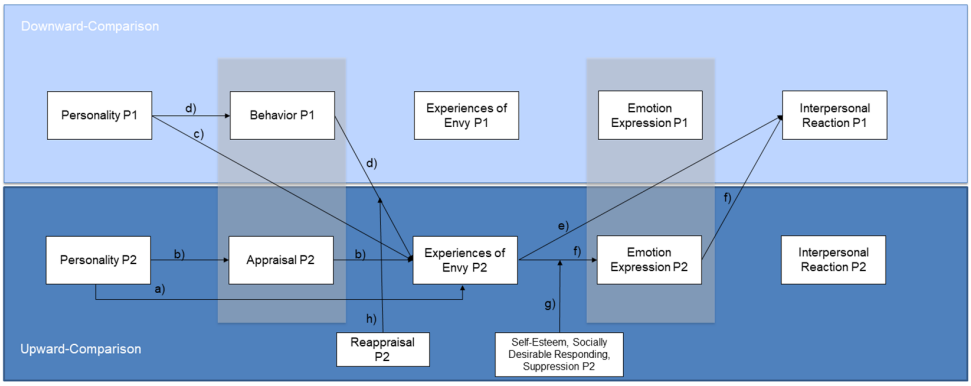
Figure 1

An Interpersonal Model of Envy



Note. P1 and P2 are interaction partners. The variables in the bottom half refer to P2, who is inferior to P1 because P2 faces an upward comparison; P1 is superior to P2 because P1 faces a downward comparison. The model is simplified—for example, paths can also go backwards to preceding components, and thus, they are not exhaustive.

Moreover, in accordance with state-trait models, a trait influences the intensity of the state by having an impact on an individual's appraisal of the situation (see Spielberger, 1972). Thus, individuals with specific personality traits should be prone to interpreting the outcome of an upward social comparison situation as painful or threatening, which should be related to an intense experience of envy (van de Ven et al., 2012, see Figure 1, indirect path b).

Given that social emotions are particularly dependent on interactions between people, the personality characteristics of a person's interaction partner should have specific effects on what the person experiences (Figure 1, path c). However, personality traits must be observable in order to be perceived by the interaction partner (Brunswik, 1956). For example, if Partner 1 who tends to high narcissism or high self-esteem (Personality P1, Figure 1) presents their positive outcome of a social comparison boastfully (Behavior P1, Figure 1), this may be perceived by Partner 2 and may thus influence Partners 2's envious reaction (Figure 1, indirect path d).

Experiences of Envy Have Interpersonal Consequences for Both Interaction Partners

Emotions have important implications for social relationships with other people. For example, across three studies, Rentzsch et al. (2015) found that envy was significantly related to hostile reactions toward others. However, the interpersonal responses of interaction partners are presently less clear (Figure 1, path e). We argue that, if the

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experience of envy results in corresponding expressive behavior, then such behavior may be sanctioned by one's social environment (Ekman & Friesen, 1969), for example, by perceiving the other as less likeable or by negative interaction behavior (Figure 1, indirect path f). Typically, social norms might involve appearing unaffected or neutral when being outperformed by another person. Perceiving expressions of less smiling, less pleasure (e.g., Rodriguez Mosquera et al., 2010), less eye contact, or a hostile expression in the interaction partner, however, may prompt the superior person to react negatively toward the other because of the social norm transgression (Figure 1, indirect path f). For an illustrative example on how to analyze the data including open analysis code please find Lange et al. (2020, Study 1).

The Proposed Associations With the Experience of Envy are Moderated by Individual Differences

The experience of an emotion may lead to the expression of that emotion, such as smiling or crying (e.g., Gross & John, 1997). However, for some individuals subjective feelings might not be expressed as observable behavior per se (Gross & John, 1997) because expression may depend on other factors, for example, display rules (Ekman & Friesen, 1969). The interpersonal model proposes that differences in the expression of envy are, besides situational factors, due to individual differences in tendencies to comply with social norms. For example, self-esteem has been shown to be associated with concerns about being accepted by others (Murray & Holmes, 2000). Furthermore, tendencies to engage in socially desirable responding are linked to concerns about norm-related behavior (Paulhus, 1994). Therefore, the relationship between the experience of envy and expression may be influenced by individual differences in self-esteem and socially desirable responding (Figure 1, path g). Similarly, the expression of envy should be weaker in people who are strongly motivated to suppress their emotions. It can be expected that response-focused emotion regulation strategies such as suppression (Gross, 2015) influence the link between experiencing envy and expressing it.

Considering the processes that are at work before experiencing envy, it can be expected that not everybody who faces a negative upward comparison with another person and observes self-confident or unsocial behavior in the superior person will react with intense negative emotions such as envy. Instead, we argue that people differ from each other in how they cope with such a situation and thus differ in their emotional experience. Individual differences in antecedent-focused emotion regulation strategies should therefore play an important role. For example, cognitive reappraisal consists of changing the way a situation is construed so as to decrease its emotional impact (Gross, 2015). Thus, people who try to see a situation as positively as possible or who view a situation as a challenge might be able to overcome the devastating effects of the self-assured behavior of the interaction partner, whereas people who do not cope with

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situations in such a constructive way should experience higher levels of envy (Figure 1, path h).

In order to examine our model assumptions and to account for the proposed interpersonal dynamics, we set up a study that included a dyadic design and social interactions, and a multimethod assessment of the study variables, i.e., self- and partner-reports from both interaction partners and video-based analyses.

Method

Preregistration

The methods and some of the hypotheses of the PESI study were preregistered before all the data had been collected and before any of the data had been analyzed (see Supplementary Materials). We accessed some parts of the data during the administration of the study but not for the analyses. First, we used participants' age and gender to automatically match them to form dyads for the laboratory part of the study. We also monitored the age and gender distributions of participants throughout the data collection process. Second, we used participants' responses to the Multidimensional Self-Esteem Scale (MSES; Schütz et al., 2016) to automatically generate individualized feedback on their self-esteem.

Participants

Data collection was conducted in 2017. Participants were recruited via mailing lists, social media, and announcements in regional and national newspapers. Participants were supposed to be at least 18 years of age and able to speak and write German fluently.[1] Incentives for participation at Part 1 and Part 2 of the study (i.e., an online questionnaire and a laboratory session) included personal feedback on the results of their self-esteem assessment as well as a monetary remuneration of 25€ plus the chance to win a small monetary prize. The value of the additional prize was not specified in the study announcement. As a rationale for the targeted sample size, we conducted a priori power analyses. We preregistered the targeted sample size of a minimum of 200 dyads, which was based on a priori power analyses and preregistered data exclusion criteria (see Supplementary Materials for more detail).

1) Three participants were only 16 or 17, but the legal advisor of the university said that they could participate as long as they were cognitively and physically able to consent, which they were.

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Data Exclusion Criteria

Only individuals who completed both Parts 1 and 2 of the study were included in the final data set. Dyads with at least one member who indicated that they knew the other interaction partner too well were excluded. The criterion was a value of 4 on the item "How well do you know the other person?" answered on a scale of 1 (*not at all*) to 7 (*very much*). Dyads with at least one interaction partner who encountered language problems or dyads in which the actual procedure strongly deviated from the planned procedure (e.g., when there were technical problems) were excluded. In addition, it was preregistered that participants who asked to have their data deleted would also be excluded.

A total of 16 dyads were excluded due to the preregistered criteria: Eight of the participating dyads were excluded because participants knew each other too well. In four of the dyads, one interaction partner encountered language problems, and in another four dyads, the actual procedure deviated from the planned procedure.

Sample Description

The final sample consisted of 436 participants (218 dyads) who were on average 31.2 years old (SD = 14.0), with an age range of 16 to 75 years. The majority (n = 322) of the study participants were women (n = 114 were men). With respect to educational attainment, 59 participants had an intermediate school degree, 27 had a high school degree, 191 were currently enrolled as college or university students, 157 had a college or university degree, and 2 had no academic degree.

Procedure

The design of the study consisted of three parts: In the first part, participants filled out an online questionnaire. In the second part, participants met in dyads in the interaction laboratory at the university. In the third part, after the lab-based assessments had been finished, participants were contacted in order to participate in a follow-up online questionnaire. Please find Figure 2 for an overview.

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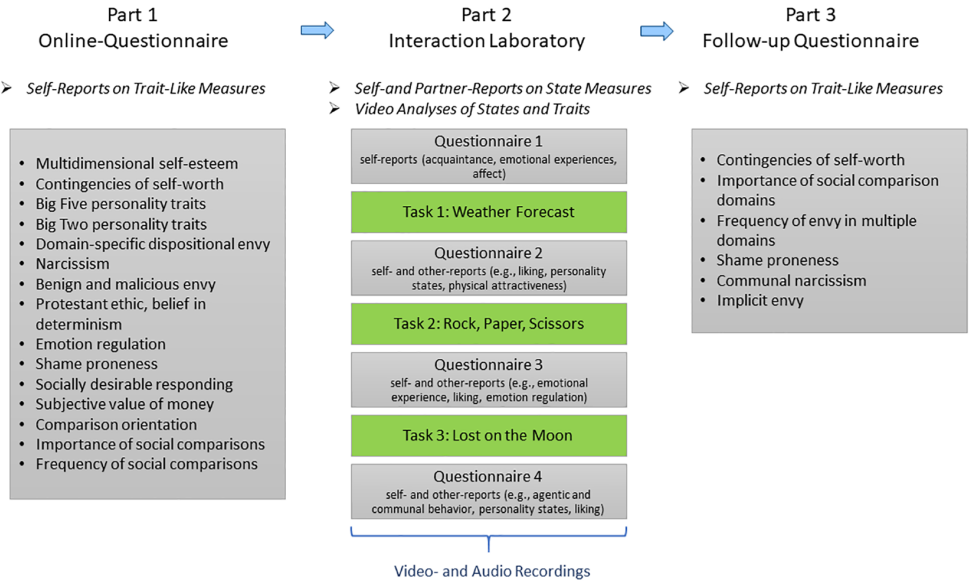
Figure 2

Design and Measures of the PESI-Study



Part 1 - Online Questionnaire

In this part, various personality measures were assessed using self-report questionnaires. After finishing the online survey, participants selected a day and time to complete the second part of the study via the website www.terminland.de. The selection of a date for Part 2 was set up in a way that ensured that only participants with the same gender and who were in the same age group were paired in dyads. We defined two age groups with a cutoff at age 35. Participants were unaware of the pairing procedure, the number of potential interaction partners, and the identity of their interaction partner. The online survey was filled out at least 1 week before the second part of the study.

Using the responses to the online questionnaire, a research assistant prepared the self-esteem feedback, which was given out at the end of Part 2 as compensation for participation.

Part 2 - Laboratory Session

Laboratory Setting — In order to create interactions that were as close as possible to real-world interactions, the atmosphere in the interaction laboratory was arranged to feel as comfortable and homelike as possible. A schematic overview of the interaction laboratory and control room, including the set-up of the design, is presented in Figure 3. Most of the time, participants sat at the table while interacting with each other. The in-

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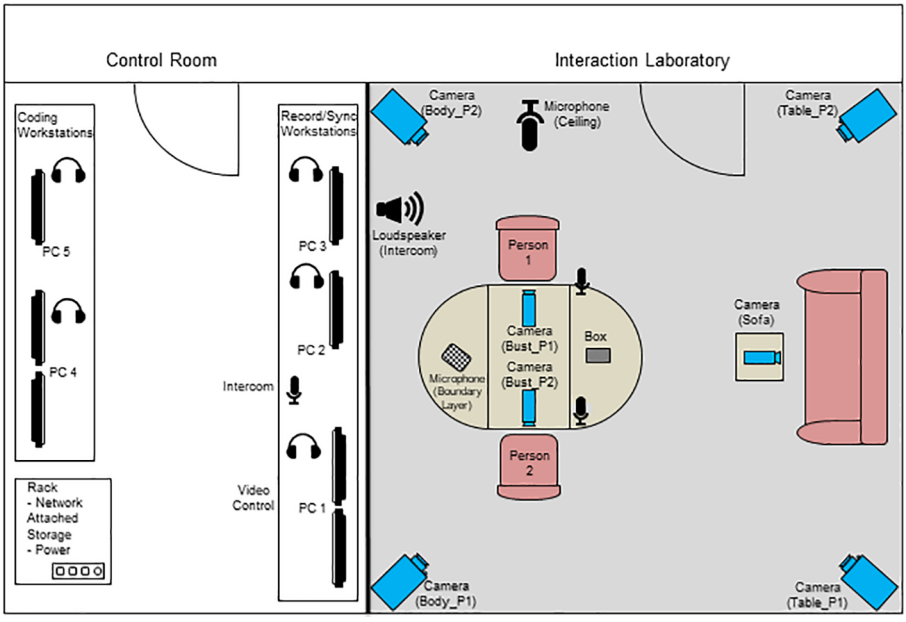
teraction laboratory was equipped with a total of seven cameras. Four pan, tilt, and zoom cameras were installed in the upper corners of the room (Sony EVI D80, resolution of 550 lines), two of them recording each participant's full body, and the other two recording the whole interaction at the table. Two individual cameras (Sony FK-560/VZ2, resolution of 560 lines) were positioned in the middle of the table, recording each participant's upper body and face. A third individual camera of the same resolution was placed in the middle of the desk standing in front of the sofa to record the seating positions of the two interaction partners on the sofa. Interactions were audio recorded using two individual wireless microphones attached to the collars or clothes of the participants, as well as one microphone on the ceiling and another boundary layer microphone recording the whole interaction. Thus, a total of *seven video* and *four audio tracks* were recorded simultaneously during the interactions and could therefore be played and analyzed synchronously. The whole system was monitored and recorded from a control room by a research assistant who used an intercom to provide participants with instructions or help. The design was fully standardized: Instructions and materials were standardized, the temperature was held constant at 22.5°C, and the lighting was also held constant. The seating positions at the table as well as the positions of the cameras and microphones were standardized.

Figure 3

Schematic Overview of the Interaction Laboratory and Control Room



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Laboratory Procedure — After arriving in the interaction lab, a research assistant welcomed the participants, provided information about the purposes of the study and the instruments that were being used, and gave participants an informed consent form to sign. The research assistant showed them their seating position at the table. Participants were asked not to talk to each other unless encouraged by the research assistant. After welcoming participants and giving them the informed consent form and the first questionnaire, the research assistant left the room. Further instructions, for example, instructions to commence and terminate the interaction tasks, were delivered via intercom from the control room by the research assistant. All instructions were standardized and were read aloud by the research assistant (please see also the Supplements for additional material and the research assistant's script in German; Supplementary Materials). The lab session lasted on average 60 minutes.

The procedure in the lab comprised three social interaction tasks. With all three interactions, the research assistant provided instructions to the participants and answered questions.

Before the first interaction task, participants completed self-reports on the state measures of emotional experiences and positive and negative affect via Questionnaire 1. Furthermore, in order to check whether the technology was set up correctly, participants were asked to look at the camera in front of them in a completely neutral way for 3 s. This allowed us to assess baseline measures, such as indicators of relatively neutral affect.

After each of the following tasks, participants completed self- and other-reports on various state measures via Questionnaires 2, 3, and 4, such as emotional experiences, personality states, liking, and agentic and communal behavior (please see the Measures section for more detail). The tasks were set up as follows:

Task 1: Introduction

First, participants were asked to read aloud a neutral weather forecast. Which partner initiated the task was randomized. This introduction was designed to help participants acclimate to the setting and settle into the situation. The read-aloud task was also designed to stimulate thin slices of behavior in each participant in order to provide some cues for interpersonal perceptions at zero acquaintance. The task lasted on average 45 seconds per person.

Task 2: Game Playing

In the next task, participants were encouraged to play a game called Rock, Paper, Scissors, which was designed to induce social comparisons between interaction partners. These comparisons can manifest themselves either as (a) a positive downward comparison or (b) a negative upward comparison, where (a) the person who won the game (the "superior" person) encountered a downward comparison and (b) the person who

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lost the game (the "inferior" person) encountered an upward comparison. The task had been pretested (Rentzsch & Gross, 2015). The rules of the game were provided on a sheet of paper. In a single round, each participant picked one of the options (i.e., rock, paper, or scissors). Rock beats scissors but loses against paper. Paper beats rock but loses against scissors. Participants completed three practice rounds first to get acquainted with the game. Afterwards, the game began: Participants were informed that the game was finished when a participant won a round and that the winner would receive a small monetary prize. If there was a winner, the game was finished after one single round. If the outcome was a draw, participants played additional rounds until a winner could be identified. The prize was a 10€ bank note that was placed in an opaque box next to both participants; the winner took the prize out of the box. Until the end, the bank note was supposed to remain on the table next to the participant who had just won the game. After the game, participants were left without further instructions for about 7 s. This allowed us to analyze behavioral expressions that occurred after the game. The task lasted on average 1 to 2 minutes.

Task 3: Lost on the Moon

Next, participants interacted in a problem-solving task called Lost on the Moon using competitive instructions (see below). In this task, each participant individually rank-ordered available resources in terms of their importance for survival after crash-landing on the moon. Then, participants traded resources with each other in order to attain the best selection of items for themselves. This task was intended to elicit interpersonal behavior in the interaction partners, such as agentic and communal behavior, that would be observed and coded by independent observers or by automatic algorithms for the purpose of investigating interpersonal behavior. Participants completed the task in an average of 15 minutes. The instruction was as follows:

> "Your spaceship was originally scheduled to rendezvous with a mother ship on the lighted surface of the moon. Due to mechanical difficulties, however, your ship was forced to land at a spot 200 miles from the rendezvous point. The rough landing has ruined your ship, killed the three other members, and damaged much of the equipment aboard. You and the other person are the only survivors; only the 14 items listed below were undamaged. Your individual survival depends on reaching the mother ship.
>
> Your task is to individually rank the 14 items in terms of their importance for a successful trip to the mother ship. Please note that there is in fact an optimal rank order, so carefully consider the pros and cons for each item. Indicate your individual ranking in the space below. Put a number 1 by the most important item, a number 2 by the second most important item and so on through number 14,

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> the least important item. Do not give the same ranking to more than 1 item; that is, no ties are allowed. Please note that there is a small amount of oxygen included in your spacesuit, which will be sufficient only if you reach the mother ship at pace. Finish this task within 10 minutes.
>
> Afterwards, trade items with the other person in order to attain the best selection of items for yourself, as you have to cover the distance by yourself. You have 15 minutes to complete trading items."

After finishing Task 3, participants sat on the sofa next to each other and completed the last questionnaire (Questionnaire 4). Participants were given no specific instructions on how or where to sit on the sofa. This procedure allowed us to measure the seating position of each participant (see Hebel & Rentzsch, 2022).

At the end, participants were thanked and debriefed. The research assistant provided monetary reimbursement as well as the personal self-esteem feedback in print. The 10€ prize was split between the two participants so that each received a total of 30€ as reimbursement for participating at Part 1 and Part 2 of the study. The feedback contained a brief introduction to the concept of multidimensional self-esteem and participants' scores on each facet of self-esteem in comparison with the norm sample for their gender. Table 1 presents a schematic display of the procedure followed in the lab session (Part 2).

Table 1

Laboratory Session Procedure (Part 2)

Participants are welcomed and informed consent form is administered
Questionnaire 1
Camera check (video recording begins)
Task 1: Reading a Weather Forecast Aloud
Questionnaire 2
Task 2: Rock, Paper, Scissors
Questionnaire 3
Task 3: Lost on the Moon
Participants take a seat on the sofa
Questionnaire 4
Participants are thanked and debriefed
Monetary reimbursement and self-esteem feedback are given out

Part 3 - Follow-Up Questionnaire

In December 2017, participants were contacted again to invite them to participate in a follow-up survey. Participants were offered a 5€ voucher as reimbursement for taking part in this survey. In this part, various personality measures were assessed using self-report questionnaires.

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Measures

The measures used in the PESI study were based on a multimethod assessment. Three types of measures were used: (a) *self-reports* on trait-like measures in the online questionnaire (Part 1) and in the follow-up online questionnaire (Part 3), (b) *self- and partner-reports* on states via Questionnaires 1 to 4 in the lab session (Part 2), and (c) *video analyses* of traits and states of both members of the dyad or the whole dyad in the lab session (Part 2).

A detailed overview of all measures, including the names of the validated scales and their references, is provided in the Codebook (see Supplementary Materials). In the Codebook and in the preregistration document (see Supplementary Materials), we also provide a description of the computation of scale scores and of additional specific indices that were assessed such as indices that pertain to the performance in the Lost on the Moon task.

A visualization of the measures of all parts of the study is provided in Figure 2. Measures from the online questionnaire (Part 1) and the follow-up questionnaire (Part 3) are presented in Table 2. An overview of the state measures assessed via the self- and partner-reports in the lab session (Part 1) is provided in Table 3.

Table 2

Trait-Like Measures Used in the Online Questionnaire (Part 1) and the Follow-Up Questionnaire (Part 3)

Measures in the online questionnaire (Part 1)	**Measures in the follow-up questionnaire (Part 3)**
Multidimensional self-esteem	Contingencies of self-worth
Global self-esteem (self-regard)	God's love
Social contact	Health
Social criticism	Virtue
Performance	Importance of domains of social comparison
Physical appearance	Frequency of envy in multiple domains
Physical ability	Shame proneness
Contingencies of self-worth	Bodily shame
Others' approval	Cognitive shame
Appearance	Existential shame
Competition	Global shame
Family support	Communal Narcissism (CNI)
Academic competence	Implicit envy
Wealth	
Big Five personality traits	
Extraversion	
Conscientiousness	
Neuroticism	

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Measures in the online questionnaire (Part 1)	Measures in the follow-up questionnaire (Part 3)
Openness	
Agreeableness	
Big Two personality traits	
Agency	
Communion	
Domain-Specific Dispositional Envy	
Attraction	
Competence	
Wealth	
Global envy	
Narcissism (NARQ)	
Admiration	
Rivalry	
Narcissism (NPI)	
Benign and malicious envy	
Benign envy	
Malicious envy	
Protestant ethic, belief in determinism	
Emotion regulation	
Reappraisal	
Suppression	
Shame proneness	
Bodily shame	
Cognitive shame	
Existential shame	
Global shame	
Socially desirable responding	
Self-deceptive enhancement	
Impression management	
Subjective value of money	
Comparison orientation	
Comparisons of abilities	
Comparisons of opinions	
Global comparison orientation	
Importance of social comparisons in multiple domains	
Frequency of social comparisons	

Note. NARQ = Narcissistic Admiration and Rivalry Questionnaire, NPI = Narcissistic Personality Inventory. A detailed overview of all measures, including the names of the validated scales and their references, is provided in the Codebook (see Supplementary Materials).

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Table 3

State Measures Assessed via Self- or Other-Reports During the Laboratory Session (Part 2)

Measure	Description	Self- or other-report (questionnaire number)
Acquaintance	Acquaintance with the other person	Self (1)
Emotional experience	Emotional experience	Self (1, 3, 4), other (3, 4)
Affect	Positive and negative affect	Self (1, 3, 4), other (3, 4)
Interpersonal perception	Liking and relationship closeness	Self (2, 3, 4), other (2, 3, 4)
Personality, intelligence, attractiveness	Big Five personality, agency, communion, narcissism, intelligence, physical attractiveness	Self (2, 3, 4), other (2, 3, 4)
Appraisals of the situation	Cognitive appraisals of the situation	Self (3, 4)
State emotion regulation	State cognitive reappraisal and emotion suppression	Self (3)
State benign and malicious envy	Self-perceived benign and malicious envy	Self (3, 4)
Attribution	Attribution of the outcome of the Rock, Paper, Scissors game	Self (3)
Performance in the moon task	Results of the moon task: evaluated relevance of items and obtainment of items	Self (4)
Agentic and communal behavior	Perceived agentic and communal behavior	Self (4), other (4)
Evaluation of performance in the moon task	Evaluation of own performance in the moon task	Self (4), other (4)

Video Analysis

In the following, we provide an overview of the video analyses that have been conducted as of this publication. Video footage that was recorded during the laboratory session was analyzed with respect to personality, emotions, and behavior. *Video-based behavioral observation* was conducted by trained coders using the Mangold Interact software (Mangold International GmbH, 2018). *Video-based ratings* (of personality, emotions, and behavior) were conducted by trained raters. Furthermore, some footage was *automatically analyzed* by face-, body-, and voice-recognition software, (a) OpenFace (Baltrušaitis et al., 2018), (b) OpenPose (Cao et al., 2019), and (c) Praat (Boersma & Weenink, 2021).

Table 4 presents a technical overview of all video- and audio-recordings. The perspective of each of the video cameras is displayed in Figure 4. Table 5 presents an overview of all measures that have been assessed via video analysis so far. Please find a detailed

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overview of all measures that were assessed via video analysis in the Codebook (see Supplementary Materials).

Table 4

Overview of Video and Audio Recordings

Video camera	Recorded objects	Examples of variables that may be analyzed	Recorded audio tracks
Table_P1	- Entire table - body of P1, P2 - P1 is seen from the front - P2 is seen more from behind	- Interaction behavior of the dyad - interaction behavior of P1	Combination of ceiling microphone and boundary layer microphone
Table_P2	- Entire table - body of P1, P2 - P2 is seen from the front - P1 is seen more from behind	- Interaction behavior of the dyad - interaction behavior of P2	Combination of ceiling microphone and boundary layer microphone
Body_P1	Front of P1 including upper body from slightly above right (from view of P1)	- Body posture P1 - bodily attractiveness P1 - personality ratings P1	Combination of ceiling microphone and boundary layer microphone
Body_P2	Front of P2 including upper body from slightly above left (from view of P1)	- Body posture P2 - bodily attractiveness P2 - personality ratings P2	Combination of ceiling microphone and boundary layer microphone
Bust_P1	Face and shoulders of P1	- Facial expression P1 - facial attractiveness P1	Wireless microphone P1
Bust_P2	Face and shoulders of P2	- Facial expression P2 - facial attractiveness P2	Wireless microphone P2
Sofa	Front of P1 and P2 from center bottom	- Seating distance - body orientation of P1 and P2	No audio

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Figure 4

Perspectives of the Video Cameras

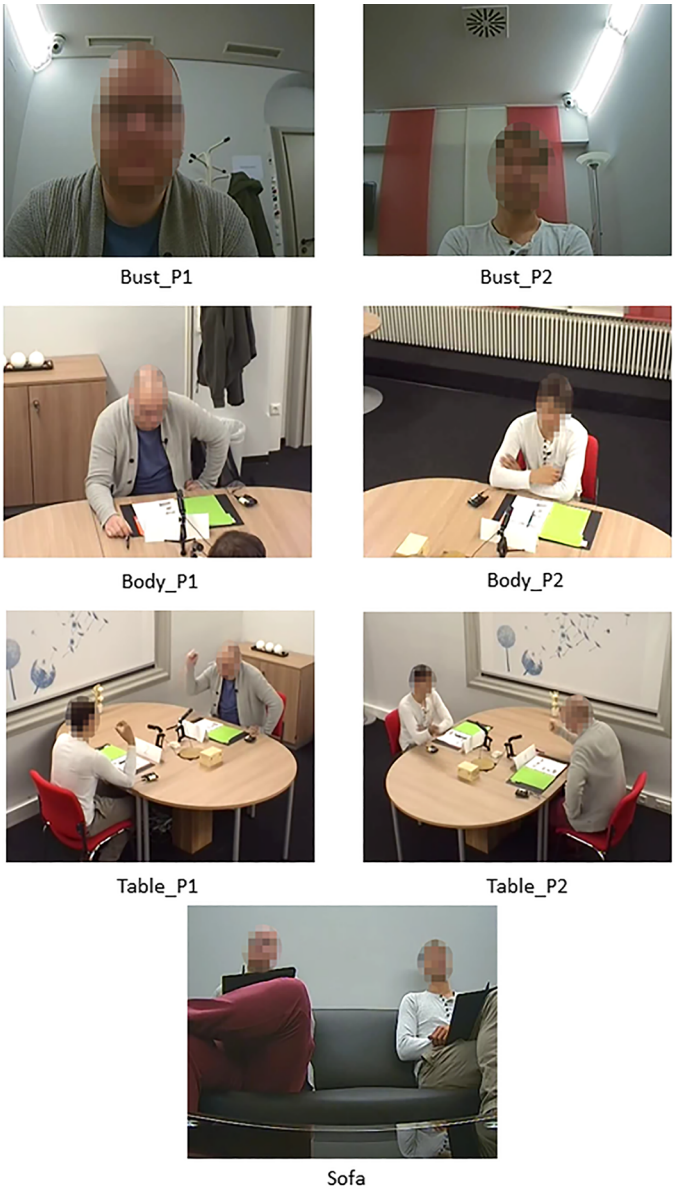

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Table 5

Overview of Current Video Analyses

Coding round	Variables of interest	Video stimulus and video sequence	Coders	Type
Affect	- Global affect - emotional experience - positive, negative affect	Bust_P1, Bust_P2: After the Rock, Paper, Scissors game, after the prize was placed on the table, until the beginning of Questionnaire 3	4 raters, each rater rated all participants in a randomized order	Rating
Gaze behavior	Gaze direction (gaze frequency, gaze duration)	Table_P1, Table_P2, Body_P1, Body_P2, Bust_P1, Bust_P2: After the Rock, Paper, Scissors game, after the prize was placed on the table, until the beginning of Questionnaire 3.	1 main coder who coded all participants, 1 coder who coded one third of all participants to check for reliability	Behavioral coding
Body orientation	Body orientation	Sofa: After participants completed the moon task and were invited to take a seat on the sofa	2 coders who coded all participants	Behavioral coding
Seating distance	Seating distance	Sofa: After participants completed the moon task and were invited to take a seat on the sofa	2 coders who coded all participants	Behavioral coding
Agentic and communal behavior	- Agentic behavior - communal behavior - Big Five personality traits - agency, communion - intelligence, attractiveness	Table_P1, Table_P2, Body_P1, Body_P2: During the second part of the Lost on the Moon task	2 x 4 raters, each rater rated half of all participants in a randomized order; 4 raters shared the same targets	Rating
Emotion regulation	- Emotion regulation (distraction, reappraisal, suppression) - lip pressing - suppression (ERQ)	Body_P1, Body_P2, Bust_P1, Bust_P2: Immediately after the last round of the Rock, Paper, Scissors game, until the beginning of Questionnaire 3.	4 raters who rated all participants in a randomized order	Rating

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Coding round	Variables of interest	Video stimulus and video sequence	Coders	Type
	- pride, envy			
Big Five	- Big Five personality - agency, communion - intelligence, attraction - narcissism - liking	Table_P1, Table_P2, Body_P1, Body_P2, Bust_P1, Bust_P2: During the Rock, Paper, Scissors game	4 raters who rated all participants in a randomized order	Rating
Automatic analysis	-Asymmetric smile - symmetric smile - V-brows - head down and look at partner - head tilted back - Visual dominance ratio (VDR) - look-speak ratio - look-listen ratio - arm expansiveness - pitch - deeper pitch - higher pitch	Bust_P1, Bust_P2: During the second part of the Lost on the Moon task	Via OpenFace, OpenPose, Praat	Automatic analysis
	Gaze behavior	Bust_P1, Bust_P2: After the Rock, Paper, Scissors game, after the prize was placed on the table, until the beginning of Questionnaire 3.	Via OpenFace	Automatic analysis

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Demographic Measures

In the PESI study, we assessed demographic information on gender, age, socioeconomic status, educational attainment as well as self-reported height and weight of the participants.

Open Research Policy

We provide open material with detailed descriptions of the PESI study in the Open Science Framework (see Supplementary Materials).

Ongoing and Planned Analyses

In Shepard et al. (2022), we investigated specific eye gaze behavior pertaining to interaction partners experiencing envy. Consistent with the preregistered hypothesis, we showed both via manual behavioral observation of eye gaze by trained coders and via automatic face recognition that those who lost in the Rock Paper Scissors game looked significantly more often and longer at their partner than the superior person. We hypothesized that people who feel envy tend to focus their attention particularly strongly on the envied person. Of further interest are processes in social interactions that go beyond emotions. For example, in Hebel and Rentzsch (2022) we showed that seating distance measured between the interaction partners when sitting on the sofa was associated with perceptions of liking. Participants who liked each other sat closer together on the sofa than participants who experienced less liking. In addition, we were able to show that personality (measured via self- and other-report) predicted the seating position. Furthermore, we plan to investigate the link between voice pitch and personality states during dyadic interactions (Stern & Rentzsch, 2022). Previous studies tested potential voice modulations in social contexts but did not investigate real social interactions. Here, we aim to fill the research gap by investigating how voice modulations are related to personality states in social interactions.

Collaborations and Future Directions

Within the PESI project, various collaborations are feasible and strongly encouraged. Therefore, we cordially invite researchers to collaborate.

The interpersonal model of envy we presented at the beginning of this article may be understood as a theoretical illustration for the kind of research questions that can be examined with the PESI data. Importantly, this illustration does not limit the breadth of emotions, personality traits, and the relationships and processes between variables that could and should be studied within PESI. In the following, we provide some examples for

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future research questions that may be pursued with the present data. Further questions are provided in the preregistration document.

- Are individuals high in antagonistic narcissism liked less by their interaction partners after the moon task? Is the relationship between antagonistic narcissism and liking mediated by antagonistic behavior and being perceived as antagonistic, and moderated by success or failure in the task?
- Does a person who faces a positive downward social comparison experience more shame due to receiving a monetary reward while the other person does not? And is this relationship pronounced in women, and in participants with higher levels of agreeableness and trait cognitive shame?
- Do partners modulate their interpersonal perceptions of the interaction partner after having experienced success or failure in a competition task (e.g., perceiving the partner as more likable, or as less intelligent and less attractive)? Is this change in interpersonal perceptions associated with feelings of envy?
- Cue utilization and cue validity: Are specific emotional expressive cues linked to a) the other-reports of envious feelings by interactions partners, b) the self-reports of envious feelings, and c) ratings by independent observers?
- Do interaction partners adapt their interpersonal behaviors (such as being more generous or more selfish) after attributing the outcome of a competition task to (bad) luck or deservingness?
- Multitrait-multimethod analyses: How much do different raters (self, partner, video) agree in their perceptions of emotional states? To what degree does agreement depend on the specific emotion of interest? Do perceptions of agentic and communal behavior by different raters (self, partner, video) align with each other?
- Accuracy in interpersonal perception: How much do partner-reports of personality states align with self-reports of personality traits/states? Is there an increase in agreement in the sequence of multiple tasks?

Furthermore, the theoretical framework of the PESI project is closely related to contemporary theories on personality dynamics (see, e.g., Rauthmann, 2021, for an overview) and to emotion research (e.g., Gross, 2015). With regard to the methods used, it may well be fruitful to take advantage of the benefits associated with our multimethod assessment. Last but not least, the captured video material (more than 1,500 hr of videotaped recordings) holds great potential for future research, especially when it comes to newer approaches involving automatic video- and audio analyses.

The best way to discuss research ideas and obtain the data is to contact the PI using the following contact information: Katrin Rentzsch, Psychologische Hochschule Berlin, k.rentzsch@phb.de

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Author Contributions: *Katrin Rentzsch*—Idea, conceptualization | Design planning | Resource provision (materials, participants, etc.) | Research implementation (software, hardware, etc.) | Data collection | Data management (storage, curation, processing, etc.) | Visualization (data presentation, figures, etc.) | Writing | Supervision, mentoring | Project coordination, administration | Funding to conduct the work. *Anne-Katrin Giese*—Data collection | Writing | Project coordination, administration. *Vera Hebel*—Resource provision (materials, participants, etc.) | Research implementation (software, hardware, etc.) | Data collection | Data management (storage, curation, processing, etc.) | Feedback, revisions | Project coordination, administration. *Thomas Lösch*—Design planning | Resource provision (materials, participants, etc.) | Research implementation (software, hardware, etc.) | Data collection | Data management (storage, curation, processing, etc.) | Feedback, revisions | Supervision, mentoring | Project coordination, administration.

Ethics Statement: This project was approved by the ethics committee at the University of Bamberg.

Data Availability: Data can be obtained by contacting the PI, Katrin Rentzsch, Psychologische Hochschule Berlin, k.rentzsch@phb.de. PESI is an ongoing project and data sharing is bound to specific privacy and data usage regulations, especially the video- and audio material.

Supplementary Materials

For this article, the following Supplementary Matrials are available (for access see Index of Supplementary Materials below):

- Preregistration documentation
- Study design, sampling plan, and material
- Video coding
- Codebook
- Open peer-review

Index of Supplementary Materials

Rentzsch, K., & Lösch, T. (2017a). *Supplementary materials to "Personality and emotions in social interactions – the PESI project"* [Preregistration documentation, study design, sampling plan, and material, video coding, codebook]. OSF. https://osf.io/2uf7a/

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