Supplemental Online Material of
"When and Why Being Ostracized Affects Veracity Judgments"

Supplemental Online Material of Experiment 1

Pretest 1: Affiliation relevance of stimulus material used in Experiment 1

Pretest 1 tested if reasons for movie and TV series preferences are perceived as affiliation-relevant. To this end, pretest participants ($N = 22$; 68% female; 21 university students; $M_{age} = 25.6$, $SD = 3.8$) were asked to imagine that they meet a person with whom they might wish to strike up a friendship. Participants were then provided with the following four questions: Q1: "What hobbies do you have?"; Q2: "Do you prefer going by car or bicycle? Or do you prefer walking?"; Q3: "What movies/TV series do you like (dislike) and why do you like (dislike) these movies/TV series?"; Q4: "Are you an early riser or a late riser?". Participants' task was not to answer these questions, but to indicate the extent to which the answers to these questions help evaluate how well the friendship might work (rating scales from 1 = *not at all helpful* to 9 = *very helpful*). We expected Q1 and Q3 to be helpful questions; by contrast, Q2 and Q4 should not be perceived as particularly helpful.

    As expected, answers to Q1 (hobbies: $M = 6.45$, $SD = 1.63$) and Q3 (movies: $M = 6.09$, $SD = 1.72$) were rated as helpful for evaluating how well the friendship might work (i.e., mean scores were significantly above the scale's midpoint of 5), $t(21) = 4.20$, $p < .001$, and $t(21) = 2.98$, $p = .007$, respectively. By contrast, answers to Q2 (preferred means of transportation: $M = 3.73$, $SD = 1.93$) and Q4 (early riser or late riser*: $M = 4.36$, $SD = 1.94$) were not rated as helpful, $t(21) = -3.09$, $p = .006$, and $t(21) = -1.54$, $p = .139$, respectively. Moreover, answers to the questions about hobbies and movies were rated as significantly more helpful than answers to the questions about preferred means of transportation and whether someone is an early riser or late riser, $|ts| > 2.76$, $ps < .012$. It can therefore be argued that the stimulus material of Experiment 1 is perceived as affiliation-relevant.

Further variables assessed in Experiment 1

In addition to the variables reported in the Method section of Experiment 1, we assessed the variables summarized in Table S1. Except for belonging and the belief of being lied to often in everyday life, ostracized and included participants did not differ significantly from each other (ps > .05). Ostracized (versus included) participants felt less belonging and thought that they were less often lied to in everyday life. Importantly, the effect of social experience (inclusion vs. ostracism) on classification accuracy could not be attributed to any assessed variable. All results are available from the first author.

Table S1. Further variables assessed in Experiment 1.

Assessed Variables	Items
Belonging[a,b,c]	I feel rejected. [reverse scored] I have the feeling of belonging.
Items related to lie detection	Confidence in lie-truth judgment for each message (0-100%)
	Self-reported use of verbal behavior relative to nonverbal behavior[d] When watching the video recordings, did you pay more attention to persons' nonverbal behavior or verbal behavior? Did you use more the persons' nonverbal behavior or verbal behavior to make judgments of lie and truth?
	Difficulty of veracity judgments It was difficult for me to pay attention to the persons' nonverbal behavior. It was difficult for me to pay attention to the persons' verbal behavior. Making judgments of lie and truth was difficult for me.
	Subjective importance of accurate veracity judgments It was important to me to judge people who told the truth not as liars. It was important to me not to overlook people who lie. It was important to me to judge people who tell the truth accurately. It was important to me to identify liars as such.
	Effort to make veracity judgments I relied on my intuition to make judgments of lie and truth. I relied on my feeling to make judgments of lie and truth. I judged spontaneously whether a person told the truth or lied. I thought intensively before making judgments of lie and truth. I tried hard to discern lies from truths.

(continued)

Table S1. *(continued)*

Assessed Variables	Items
	Lying and lie detection in everyday life
	I think that people often lie in everyday life.
	I think that I am often lied to in everyday life.[a]
	In daily life, I often try to find out whether others tell the truth or lie to me.
Mood	1= *negative* to 9 = *positive*; 1= *bad* to 9 = good; 1 = *unpleasant* to 9 = *pleasant*
Trait self-esteem[e]	Revised German version of the Rosenberg Self-Esteem Scale by von Collani and Herzberg (2003); 10 items; e.g., "On the whole, I am satisfied with myself."
Labile self-esteem[f,g]	German version of the Labile Self-Esteem Scale (Dykman, 1998) by Schoel, Bluemke, Mueller, and Stahlberg (2011); 5 items; e.g., "Compared to most people, my self-esteem changes rapidly."
Dispositional need to belong[g]	German version of the Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2013) by Hartung and Renner (2014); 10 items; e.g., "I have a strong need to belong."
Need for cognition[h]	Short version of the German adaption of the Need for Cognition Scale (Cacioppo & Petty, 1982) by Keller, Bohner, and Erb (2000); 14 items; e.g., "Thinking is not my idea of fun." [reverse scored]

Note. If not otherwise indicated, responses were given on rating scales ranging from 1 = *does not apply at all* to 9 = *applies fully*.
[a] Ostracized and included participants differed significantly from each other ($p < .05$).
[b] Only measured for online participants (Sample 1B). Belonging was assessed twice: subsequent to the Cyberball game and subsequent to all lie-truth judgments.
[c] Rating scales ranged from 1 = *not at all* to 9 = *very much*.
[d] Rating scales ranged from -4 = *nonverbal behavior* to +4 = *verbal behavior.*
[e] Rating scales ranged from 1 = *does not apply at all* to 4 = *applies fully.*
[f] Only measured for in-lab participants (Sample 1A).
[g] Rating scales ranged from 1 = *strongly disagree* to 5 = *strongly agree.*
[h] Rating scales ranged from 1 = *strongly disagree* to 7 = *strongly agree.*

Additional analyses of Experiment 1

Veracity judgments. A 2 (social experience: inclusion vs. ostracism) × 3 (set of messages) × 2 (experimental context: lab vs. online) ANOVA on the discrimination parameter *d'* unexpectedly revealed a significant main effect of set of messages, $F(2, 299) = 37.78$, $p < .001$, $\eta_p^2 = .20$. This main effect suggests that classification accuracy was higher in some sets than in others. None of the control variables (set of messages, experimental context) moderated the effect of social experience, $ps > .390$, $\eta_p^2 < .01$. The same ANOVA on the response criterion *C* also revealed a significant main effect of set of messages, $F(2, 299) = 9.46$, $p < .001$, $\eta_p^2 = .06$. This main effect suggests that truth bias was higher in some sets than in others. No other main or interaction effect was significant, $ps > .067$.

Small-scale meta-analysis of social experience effects. We conducted a small-scale meta-analysis with the social experience effects of Samples 1A and 1B. According to Lipsey and Wilson (2001), we weighted the standardized effect sizes *d* by their sample's inverse variance weight (i.e., one over the square of their standard errors). Results are summarized in Table S2.

Table S2. Results of the small-scale meta-analysis with the social experience effects (inclusion vs. ostracism) of Samples 1A and 1B.

Dependent variable	*d*	95% CI
Discrimination parameter *d'*	0.26	[0.10, 0.42]
Response criterion *C*	-0.03	[-0.19, 0.13]
Self-reported use of verbal behavior	0.12	[-0.04, 0.28]
Self-reported use of nonverbal behavior	0.08	[-0.08, 0.24]

Note. Positive values of *d* indicate higher mean scores in the ostracism than in the inclusion condition. 95% CI = 95% confidence interval.

Supplemental Online Material of Experiment 2

Pretest 2: Affiliation relevance of stimulus material used in Experiment 2

Pretest 2 tested whether the information provided in the stimulus material of Experiments 2 is perceived as affiliation-relevant. Pretest participants ($N = 21$; 76% female; 86% university students; $M_{age} = 20.6$, $SD = 2.4$) received the same instructions as the participants from Pretest 1. Participants were then shown 13 questions related to get-acquainted conversations. The questions were carefully preselected according to the criterion that participants should antici-pate answers that provide information of either high or low affiliation relevance. All questions and the pretest results are summarized in Table S3.

Table S3. Questions of Pretest 2 with their mean ratings on scales assessing the extent to which answers to the questions help evaluate someone's potential as appropriate affiliation partner (1 = *not at all helpful*; 9 = *very helpful*), standard deviations of mean ratings, and sta-tistics of the one-sample *t* tests that compare mean ratings with the scale's midpoint of 5.

Question	M	SD	t(20)	p
What movies do you like?[b,c]	5.00	1.87	0.00	.999
What hobbies do you have?[a]	7.29	1.10	9.51	< .001
What is your subject of study?	5.14	2.50	0.26	.796
Which subject in your studies do you find most interesting?	4.57	2.16	-0.91	.374
Which lecturer do you like most?	3.57	2.23	-2.94	.008
Do you prefer going by car or bicycle? Or do you prefer walking?	3.19	1.89	-4.39	< .001
Are you an early riser or a late riser?	5.14	2.31	0.28	.780
Which three words would you use to describe yourself?[a]	6.24	2.49	2.28	.034
How would you describe your behavior toward new peo-ple?	5.95	2.42	1.81	.086
Do you do a lot of things together with your housemates?[a]	5.81	1.69	2.19	.040
Do all of you participate equally in chores of your apart-ment-sharing community?[b]	5.38	2.54	0.69	.500
Is there often quarrel with your housemates?[b]	6.05	2.44	1.97	.063
Where do you see yourself professionally and personally in 10 years?	5.48	2.50	0.87	.394

[a] Used for creating the get-acquainted conversation for Experiment 2.
[b] These questions were not posed in the get-acquainted conversation of Experiment 2, but information concern-ing these questions was provided to introduce other apparently affiliation-relevant information, such as some-one's willingness to help others or to maintain harmony in relationships.
[c] One may wonder why answers to this question were not perceived as affiliation-relevant, whereas answers to the question "What movies/TV series do you like (dislike) and why do you like (dislike) these movies/TV se-ries?" were perceived as affiliation-relevant in Pretest 1. We speculate that the difference in affiliation relevance derives from the provision of reasons: Just knowing what others like and dislike may not provide sufficient in-formation to evaluate others' potential as appropriate affiliation partners. It is the provision of reasons that pro-vides further insights relevant to affiliation (e.g., similar interests or similar types of humor). For instance, if others like a certain movie because they find it funny, and you (do not) like the movie's type of humor, this in-formation is more affiliation-relevant than just knowing that others like the movie for any unknown reasons.

Pretest 3: Verbal cues and nonverbal cues manipulations of Experiment 2

Verbal cues manipulation. Pretest participants (N = 28; 82% female; 89% university students; all native German speakers; M_{age} = 24.2, SD = 3.2) were randomly assigned to one of the two versions of the get-acquainted conversation (truthful verbal cues vs. deceptive verbal cues). After having read the conversation, participants rated whether the applicant's (i.e., Laura's) statements were plausible, consistent, coherent, detailed, and repetitive (5 rating scales; 1 = *not at all* to 9 = *very much*). Due to very high intercorrelations, responses to the items plausible, consistent, and coherent were averaged to form one single measure of perceived plausibility (α = .94). As expected, the statements with truthful verbal cues were rated to be significantly more plausible (M = 6.98, SD = 1.46), more detailed (M = 7.21, SD = 1.67) and less repetitive (M = 4.29, SD = 2.13) than the statements with deceptive verbal cues ($M_{plausibility}$ = 3.26, SD = 0.74; $M_{detailed}$ = 4.50, SD = 2.41; $M_{repetitive}$ = 7.07, SD = 2.30), $|t\mathrm{s}|$ > 3.32, $p\mathrm{s}$ < .003, $|d\mathrm{s}|$ > 1.25.

Nonverbal cues manipulation. Two independent coders rated the occurrence of the three manipulated nonverbal cues (i.e., duration of eye contact, number of posture shifts, and duration of fidgeting) based on the muted video recordings. The intercoder reliability was excellent (all average-measures intraclass correlations were greater than .87). As expected, in the video recordings with deceptive nonverbal cues, coders recorded less eye contact, more posture shifts, and more fidgeting ($M\mathrm{s}$ = 175.75 s, 6.00, and 134.25 s) than in the video recordings with truthful nonverbal cues ($M\mathrm{s}$ = 217.50 s, 1.00, and 0.00 s), $|t\mathrm{s}|$ > 9.56, $p\mathrm{s}$ < .011, $|d\mathrm{s}|$ > 9.56 (for posture shifts no statistical test was computed because standard deviations were zero). Moreover, the recorded occurrence of the nonverbal cues in the video recordings did not differ between verbal cues conditions, $|t\mathrm{s}|$ < 1.

Further Variables Assessed in Experiment 2

In addition to the variables reported in the Method section of Experiment 2, we assessed the variables summarized in Table S4. Except for mood (assessed subsequent to the Cyberball game) and perceived validity of verbal versus nonverbal cues, none of the other control variables (belonging, control, need for cognition) significantly moderated the effect of nonverbal cues on the veracity judgment (ps > .10). Importantly, neither the Mood × Nonverbal Cues interaction nor the Perceived Validity × Nonverbal Cues interaction explained the observed Social Experience × Nonverbal Cues interaction on the veracity judgment. All results are available from the first author.

Table S4. Further variables assessed in Experiment 2.

Assessed Variables	Items
Mood[a]	1= *negative* to 9 = *positive*; 1= *bad* to 9 = good
Belonging[a]	I feel rejected. [reverse scored] I have the feeling of belonging.
Control[a]	I have the feeling that others decide everything. [reverse scored] I feel influential.
Binary lie-truth judgment[b]	In your opinion, did Laura lie during the conversation with Martina? (0 = *Yes*; 1 = *No*)
Perceived verbal behavior	Laura's answers were… …plausible …consistent …coherent
Perceived validity of verbal versus nonverbal cues	In your opinion, what is more likely to reveal whether someone is lying or telling the truth? (1 = *someone's behavior*; 9 = *someone's statements*)
Need for cognition[c]	Five items selected from the German adaption of the Need for Cognition Scale (Cacioppo & Petty, 1982) by Bless, Wänke, Bohner, Fellhauer, and Schwarz (1994); e.g., "The notion of thinking abstractly is not appealing to me." [reverse scored]

Note. If not otherwise indicated, responses were given on rating scales ranging from 1 = *not at all* to 9 = *very much*.
[a] Mood, belonging, and control were assessed twice: subsequent to the Cyberball game and subsequent to the veracity judgment. Ostracized and included participants differed significantly from each other (p < .05) except for control assessed subsequent to the veracity judgment.
[b] This variable could not be analyzed because 92% of the participants in Experiment 2 indicated that Laura had lied. This result is consistent with pretest data, showing that almost all pretest participants thought that Laura was not completely honest at some point during the conversation when they were forced to decide between lie and truth.
[c] Rating scales ranged from 1 = *strongly disagree* to 7 = *strongly agree*.

Effects on perceived nonverbal behavior in Experiment 2

The results of a 2 (social experience: inclusion vs. ostracism) × 2 (nonverbal cues: truthful vs. deceptive) × 2 (verbal cues: truthful vs. deceptive) ANOVA on perceived nonverbal behavior are summarized in Table S5.

Table S5. Inferential statistics of all main and interaction effects on perceived nonverbal behavior in Experiment 2.

Variable	df	MS	F	p	η_p^2	CI$_{diff}$
SE	1	0.32	0.20	.659	.002	[-0.54, 0.34]
Nonverbal	1	463.16	285.85	< .001	.70	[-4.22, -3.34]
Verbal	1	0.03	0.02	.886	< .001	[-0.41, 0.47]
SE × Nonverbal	1	2.20	1.36	.246	.01	
SE × Verbal	1	0.71	0.44	.509	.004	
Nonverbal × Verbal	1	0.63	0.39	.534	.003	
SE × Nonverbal × Verbal	1	0.58	0.36	.552	.003	
Error	123					

Note. SE = social experience. Nonverbal = nonverbal cues. Verbal = verbal cues. *MS* = mean square. CI$_{diff}$ = 95% confidence interval for the difference between means.

Supplemental Online Material of Experiment 3

Pretest 4: Affiliation relevance of stimulus material used in Experiment 3

Pretest 4 tested whether the information provided in the stimulus material of Experiments 3 is perceived as affiliation-relevant. Pretest participants ($N = 21$; 29% female; 90% university students; $M_{age} = 21.5$, $SD = 2.4$) received the same instructions as the participants from Pretests 1 and 2. Participants were then shown 8 questions about a former job. All questions and the pretest results are summarized in Table S5.

Table S6. Questions of Pretest 4 with their mean ratings on scales assessing the extent to which answers to the questions help evaluate someone's potential as appropriate affiliation partner (1 = *not at all helpful*; 9 = *very helpful*), standard deviations of mean ratings, and statistics of the one-sample *t* tests that compare mean ratings with the scale's midpoint of 5.

Question	M	SD	t(20)	p
What kind of job did you do?	4.14	2.06	-1.91	.071
Which tasks did you perform in your job?[a]	4.43	2.18	-1.20	.244
Which tasks did you like or dislike?	5.19	2.06	0.42	.677
Why did you like or dislike these tasks?[b]	5.76	1.84	1.90	.072
What was the teamwork with your colleagues like?[b]	6.76	2.02	3.99	.001
Did you like working together with your colleagues or did you prefer completing your tasks alone?[b]	6.33	2.18	2.81	.011
How well did you get along with your colleagues?[b]	6.95	1.60	5.61	< .001
Did you learn something for your future life in your job?	6.19	2.16	2.53	.020

[a] Used for creating the job description of low affiliation relevance for Experiment 3.
[b] Used for creating the job description of high affiliation relevance for Experiment 3.

Pretest 5: Verbal cues and nonverbal cues manipulations of Experiment 3

     Verbal cues manipulation. Pretest participants (N = 58; 71% female; all university students; 86% native German speakers; M_{age} = 22.1, SD = 2.4) were randomly assigned to one of the four job descriptions (message content of high vs. low affiliation relevance including either truthful or deceptive verbal cues). After having read the job description, participants rated whether the job description was plausible, consistent, coherent, detailed, and repetitive (5 rating scales; 1 = *not at all* to 9 = *very much*). As in Pretest 3, responses to the items plausible, consistent, and coherent were averaged to form one single measure of perceived plausibility (α = .94). As expected, separate 2 (verbal cues: truthful vs. deceptive) × 2 (message content: high vs. low relevance to affiliation) ANOVAs revealed that job descriptions with truthful verbal cues were rated to be significantly more plausible (M = 6.26, SD = 1.86), more detailed (M = 6.66, SD = 1.91), and less repetitive (M = 5.17, SD = 1.85) than job descriptions with deceptive verbal cues ($M_{plausibility}$ = 4.16, SD = 1.85; $M_{detailed}$ = 4.28, SD = 2.76; $M_{repetitive}$ = 7.86, SD = 1.92), $F(1, 54)$ = 18.09, p < .001, η_p^2 = .25, $F(1, 54)$ = 14.82, p < .001, η_p^2 = .22, and $F(1, 54)$ = 31.16, p < .001, η_p^2 = .37, respectively. In addition, job descriptions of high affiliation relevance were rated as more repetitive (M = 7.17, SD = 1.93) than job descriptions of low affiliation relevance (M = 5.86, SD = 2.50), $F(1, 54)$ = 6.61, p = .013, η_p^2 = .11. All other main and interaction effects were not significant, all ps > .101.

     Nonverbal cues manipulation. As in Pretest 3, two independent coders rated the occurrence of the three manipulated nonverbal cues (i.e., duration of eye contact, number of posture shifts, and duration of fidgeting) based on the muted video recordings. The intercoder reliability was excellent (all intraclass correlations were greater than .98). As expected, in the video recordings with deceptive nonverbal cues, coders recorded less eye contact, more posture shifts, and more fidgeting (Ms = 49.38 s, 5.50, and 85.75 s) than in the video recordings with truthful nonverbal cues (Ms = 93.63 s, 1.00, and 0.00 s), $|t$s$|$ > 9.87, ps < .001, $|d$s$|$ > 6.98. Moreover, the recorded occurrence of the nonverbal cues in the video recordings did not differ between verbal cues or message content conditions, $|t$s$|$ < 1.

     Orthogonality of the verbal cues and nonverbal cues manipulations. To ensure that the verbal cues and nonverbal cues manipulations were as orthogonal as possible, the voice of the actress was recorded only in the four video recordings with deceptive nonverbal cues and then added to the four video recordings with truthful nonverbal cues. The lip movement of the actress in the four video recordings with truthful nonverbal cues corresponded fully with the recorded voices that were added to the video recordings. As a result, no participant noticed that it was not the original audio recording of the videos. In addition, the actress showed a very similar sequence of movements for all video recordings with truthful nonverbal cues and a very similar sequence of movements for all video recordings with deceptive nonverbal cues.

Further Variables Assessed in Experiment 3

In addition to the variables reported in the Method section of Experiment 3, we assessed the variables summarized in Table S6. Mood, belonging, and control (assessed subsequent to the Cyberball game) did not significantly moderate the effect of nonverbal cues on the veracity judgment or the binary lie-truth judgment ($ps > .14$). All results are available from the first author.

Table S7. Further variables assessed in Experiment 3.

Assessed Variables	Items
Mood[a]	1= *negative* to 9 = *positive*; 1= *bad* to 9 = good
Belonging[a]	I feel rejected. [reverse scored] I have the feeling of belonging.
Control[a]	I have the feeling that others decide everything. [reverse scored] I feel influential.
Perceived verbal behavior	The student's answer was… …plausible …consistent …coherent …detailed …repetitive

Note. If not otherwise indicated, responses were given on rating scales ranging from 1 = *not at all* to 9 = *very much*.

[a] Mood, belonging, and control were assessed twice: subsequent to the Cyberball game and subsequent to the veracity judgment. Ostracized and included participants differed significantly from each other ($p < .05$) except for mood and control assessed subsequent to the veracity judgment.

Effects on perceived nonverbal behavior in Experiment 3

The results of a 2 (social experience: inclusion vs. ostracism) × 2 (nonverbal cues: truthful vs. deceptive) × 2 (verbal cues: truthful vs. deceptive) × 2 (message content: low vs. high affiliation relevance) ANOVA on perceived nonverbal behavior are summarized in Table S8.

Table S8. Inferential statistics of all main and interaction effects on perceived nonverbal behavior in Experiment 3.

Variable	df	MS	F	p	η_p^2	CI$_{diff}$
SE	1	0.04	0.03	.858	< .001	[-0.20, 0.25]
Nonverbal	1	1384.93	1033.49	< .001	.72	[-3.90, -3.45]
Verbal	1	6.92	5.16	.024	.01	[-0.48, -0.03]
Content	1	0.10	0.08	.784	< .001	[-0.26, 0.19]
SE × Nonverbal	1	0.13	0.10	.752	< .001	
SE × Verbal	1	0.38	0.28	.594	.001	
SE × Content	1	0.02	0.01	.913	< .001	
Nonverbal × Verbal	1	16.47	12.29	.001	.03	
Nonverbal × Content	1	0.03	0.02	.879	< .001	
Verbal × Content	1	2.65	1.98	.161	.005	
SE × Nonverbal × Verbal	1	0.67	0.50	.480	.001	
SE × Nonverbal × Content	1	0.02	0.02	.893	< .001	
SE × Verbal × Content	1	2.84	2.12	.146	.01	
Nonverbal × Verbal × Content	1	0.31	0.23	.631	.001	
SE × Nonverbal × Verbal × Content	1	1.02	0.76	.383	.002	
Error	398					

Note. SE = social experience. Nonverbal = nonverbal cues. Verbal = verbal cues. Content = message content. *MS* = mean square. CI$_{diff}$ = 95% confidence interval for the difference between means. The significant Nonverbal Cues × Verbal Cues interaction was unexpected. Importantly, the effect of nonverbal cues was observed for both truthful verbal cues, $F(1, 398) = 650.13$, $p < .001$, $\eta_p^2 = .62$, CI$_{diff}$ = [-4.39, -3.76], and deceptive verbal cues, $F(1, 398) = 401.22$, $p < .001$, $\eta_p^2 = .50$, CI$_{diff}$ = [-3.59, -2.95].

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