Research article
UDC 159.9.072.59
https://doi.org/10.21702/rpj.2025.3.8

Adaptation and Validation of the Russian Version of G. Clatterbuck's Attributional Confidence Scale (CL7): Psychometric Properties and Invariance

Arseniy V. Leontyev[1*], Elina S. Tsigeman[2], Larisa V. Mararitsa[2]

[1] Saint Petersburg State University, St. Petersburg, Russian Federation
[2] National Research University "Higher School of Economics" (HSE University), St. Petersburg, Russian Federation

Corresponding author: arsleokan@gmail.com

Abstract

Introduction. There are no Russian-language instruments that assess a person's confidence in predicting another's reactions and in the perceived accuracy of one's representation of that person. Meanwhile, Uncertainty Reduction Theory and Anxiety/Uncertainty Management Theory posit that attributional confidence is an indicator of the quality of interpersonal communication and can predict whether a dialogue will continue or be terminated. Studies measuring attributional confidence most often use G. Clatterbuck's Confidence in Proactive Attribution (CL7) scale, which has demonstrated good validity and reliability. **Methods.** The aim of the study was to adapt and validate the Russian version of Clatterbuck's Confidence in Proactive Attribution (CL7) questionnaire. Exploratory factor analysis and confirmatory factor analysis were conducted on a sample of 166 respondents. Criterion and discriminant validity were examined on two additional samples (N = 82 and N = 81). **Results.** We obtained strong evidence for a unidimensional structure of the questionnaire and for the optimality of this structure. Internal consistency was high. Tests of criterion and discriminant validity produced mixed findings for several subscales. **Discussion.** The scale meets internal consistency requirements, shows high reliability and adequate validity, and has a one-factor structure, indicating compliance with core psychometric standards and potential applicability in research. Gender

invariance and discriminant validity were confirmed. At the same time, results regarding the instrument's construct validity were unstable.

Keywords

social perception; attributional confidence; uncertainty; uncertainty-reduction theory; validation; adaptation; mentalization

Funding

This article was prepared within the framework of the HSE University "Mirror Laboratories" project

For citation

Leontyev, A. V., Tsigeman, E. S., & Mararitsa, L. V. (Year). Adaptation and validation of the Russian version of G. Clatterbuck's Attributional Confidence Scale (CL7): Psychometric properties and invariance. *Russian Psychological Journal*, 22(3), 131—152. https://doi.org/10.21702/rpj.2025.3.8

Introduction

Problem Statement

Attributional confidence refers to a subjective evaluation of how adequate one's available information is for assessing and predicting the behavior of others (Clatterbuck, 1979). G. Clatterbuck conceptualized attributional confidence through the lens of uncertainty, which naturally arises during the initial stages of communication with strangers (Berger & Calabrese, 1975; Clatterbuck, 1979; Gudykunst & Nishida, 1986; Samochowiec & Florack, 2010).

According to theoretical premises (Berger & Calabrese, 1975; Gudykunst, 2005; Neuliep, 2012, 2017) and empirical findings (Gudykunst & Nishida, 2001; Nadeem & Koschmann, 2023; Presbitero & Attar, 2018), attributional confidence is associated both with subjective communication effectiveness (r = 0.43 to 0.73) and with behaviors reflecting a desire to continue interaction (Duronto et al., 2005; Samochowiec & Florack, 2010).

This construct has been shown to influence relationship satisfaction (Imai et al., 2021), interpersonal attraction (Baruh & Cemalcılar, 2018), and as a mediator between perceived similarity and relationship satisfaction (Lee & Ng, 2024). Moreover, attributional confidence is often treated as a variable for comparing information-rich versus information-poor communication channels (Wagner, 2018) and for studying how individuals perceive each other in online networks (Antheunis et al., 2010; Orben & Dunbar, 2017).

Attributional confidence thus reflects people's subjective understanding of their knowledge about a communication partner, their ability to predict the partner's reactions and behaviors, and can be regarded as a crucial indicator of communication quality. The most widely used instrument for assessing this construct is the Attributional Confidence Scale (CL7), originally developed and validated by G. Clatterbuck on an American sample (Clatterbuck, 1979).

Currently, no standardized Russian-language instruments exist to measure the subjective degree of uncertainty when predicting another person's actions. Available methods such as T. Leary's Interpersonal Diagnosis of Personality (Sobchik, 2005) or the Interpersonal Trust Questionnaire (Razvalyaeva & Polskaya, 2021) focus on different aspects of interpersonal communication—namely trust and self-perception.

It should be noted that O. Khukhlaev and M. Bratkina (2021) reported on a preliminary adaptation of a modified Russian version of Clatterbuck's CL7 scale. However, the authors introduced major structural changes — for instance, reducing the number of items to four—and did not describe the translation procedure, present the full item wording, or analyze the factor structure or socio-demographic effects. Despite these omissions, they confirmed the criterion validity of their version, reporting positive correlations with positive affect and perceived communication effectiveness.

A subsequent Russian-language version appeared in 2022, differing in both the number of items and response options from both the 2021 and original versions (Khukhlaev et al., 2022). Yet again, the rationale for these modifications and the actual text of the adapted scale were not reported.

Accordingly, the aim of the present study is to provide a detailed theoretical overview of Clatterbuck's CL7 methodology, and conduct a full-scale adaptation and validation of its Russian-language version.

Theories of Uncertainty Reduction in Communication

Attributional confidence, as measured by G. Clatterbuck's Attributional Confidence Scale (CL7), is one of the key concepts within the framework of Uncertainty Reduction Theory (URT). One of the earliest examples of treating uncertainty as a central component of communication was Shannon and Weaver's Mathematical Theory of Communication (1949), in which the process of communication was described through an information-processing metaphor. In this model, communication was understood as the transmission of encoded information from a source to a receiver, who decodes the message and delivers the information to the addressee. Encoded information in this theory is characterized by entropy—a quantitative measure of a message's uncertainty. The higher the entropy, the greater the number of possible interpretations of the message.

Later, the construct of uncertainty was developed by Charles Berger and Richard Calabrese in Uncertainty Reduction Theory (URT) (Berger & Calabrese, 1975; Berger, 2005). According to URT, the level of predictive uncertainty influences the desire to learn more

about another person, determines the format and topics of conversation, and ultimately has a significant impact on the effectiveness of communication: the lower the uncertainty, the more successful the interaction becomes. Therefore, during communication people seek to reduce uncertainty and increase attributional confidence through two parallel processes: reducing uncertainty about the possible behavior of a new interlocutor (predictive uncertainty) and uncertainty about the causes of past behavior (retroactive uncertainty) (Berger & Calabrese, 1975). Retroactive attribution refers to explaining a partner's past actions based on current information, whereas proactive attribution, also based on current information, predicts their possible future actions (Berger & Calabrese, 1975; Clatterbuck, 1979).

This approach represents an alternative to Social Exchange Theory (SET) (Homans, 1958), which views human interaction as an exchange of resources, where each participant evaluates their actions in terms of potential rewards and costs, striving to maximize personal benefit. An important distinction between URT and SET lies in the fact that reducing uncertainty cannot be viewed as a personal gain, since excessive reduction may lead to boredom. Moreover, at the stage of initial acquaintance it is difficult to determine what can be considered a "reward," and therefore explaining communication in cost–benefit terms is not sufficient for predicting behavior during interaction (Berger & Calabrese, 1975). Newcomb's Theory of Communication (Newcomb, 1961), which describes the process of acquaintance through the formation of opinions and feelings toward a common object, also has its limitations in interpreting interpersonal interaction, as it does not focus on the actual process of communication between individuals (Berger & Calabrese, 1975).

Anxiety/Uncertainty Management Theory (AUM) expanded URT (Gudykunst, 1995; Gudykunst, 2005; Neuliep, 2017). In AUM, the main motive during acquaintance remains the reduction of uncertainty, but as communication continues, the focus shifts from constant reduction to managing the level of uncertainty. When uncertainty exceeds the maximum tolerable level, people feel too insecure to initiate or maintain communication (Gudykunst & Nishida, 2001). At the same time, if uncertainty drops below a minimal level, individuals may lose interest and motivation to continue interaction (Gudykunst, 1993; 1995). Another important addition was the inclusion of the construct of anxiety, which is viewed as the emotional equivalent of uncertainty and defined as «a general or nonspecific disturbance of equilibrium» (Stephan & Stephan, 1985; Stephan, 2014). According to numerous studies, attributional confidence negatively correlates with anxiety, while communication effectiveness correlates positively with attributional confidence and negatively with anxiety (Gudykunst & Shapiro, 1996; Gudykunst & Nishida, 2001; Nadeem & Koschmann, 2021).

It is also important to note that strategies for increasing attributional confidence and the factors influencing it depend on the specifics of communication in a given culture (Gudykunst & Nishida, 2001). Therefore, studies confirming the fundamental propositions of the theory on samples from different cultures (Nadeem & Koschmann, 2021), as well as

examinations of the validity and internal structure of the scale during its adaptation into another language, are particularly valuable.

Description of the Original CL7 Questionnaire by G. Clatterbuck

The CL7 questionnaire was developed based on behavioral indicators identified within the framework of Uncertainty Reduction Theory (Clatterbuck, 1979). The finalized items of the scale were presented to respondents with varying response formats—most commonly a 0–100% scale, although 4- and 9-point versions were also tested. According to the data reported in the original study, across 16 samples comprising a total of 1,328 respondents, internal consistency ranged from 0.763 to 0.975 (Cronbach's alpha).

To assess construct validity, correlations were examined with the following psychological constructs: empathy (Mehrabian & Epstein, 1972), extraversion (Maudsley Personality Inventory, short form; Jensen, 1958), dogmatism (Troldahl & Powell, 1965), tolerance of ambiguity (Martin & Westie, 1959), self-esteem (Berger, 1968), neuroticism (Maudsley Personality Inventory, short form; Jensen, 1958), and social desirability (Crowne & Marlowe, 1960). No significant relationships were found with any of these constructs, indicating that the scale meets the requirements for divergent validity.

In nearly all studies, there were no statistically significant differences in attributional confidence between men and women (in 14 out of 16 samples) or across age groups (in 13 out of 20 samples) (Clatterbuck, 1979). Using this scale, numerous studies have confirmed the relationship between attributional confidence and other constructs such as communication effectiveness ($r = 0.42$ to 0.83) and anxiety ($r = -0.26$ to -0.76) (Gudykunst et al., 1986; Gudykunst & Shapiro, 1996; Gudykunst & Nishida, 2001).

The relationship between attributional confidence and accuracy of social perception remains ambiguous: actual knowledge about another person and confidence in that knowledge may differ substantially, especially in the early stages of communication and in the absence of feedback. Within Uncertainty Reduction Theory, it is assumed that a high level of attributional confidence does not necessarily guarantee accuracy in attributional judgments (Berger & Calabrese, 1975; Clatterbuck, 1979).

In addition, a study using a modified version of the Attributional Confidence Scale demonstrated correlations with negative and positive affect (Khukhlaev & Bratkina, 2021). The predictive validity of the scale was also supported: low attributional confidence scores were strong predictors of communication avoidance or a desire to terminate interaction (Duronto et al., 2005).

The Present Study

The aim of the present study is to adapt and validate the Attributional Confidence Scale (CL7) for use in Russian-speaking samples. The study addressed four main objectives: to assess the internal consistency of the CL7 scale; to determine whether the scale maintains

its unidimensional structure as in the original study; to evaluate construct validity by testing four hypotheses; and to verify the gender invariance of the scale.

The hypotheses were as follows:

(1) Attributional confidence is negatively associated with anxiety and negative affect during communication.

(2) Attributional confidence is positively associated with communication satisfaction.

(3) Attributional confidence shows weak associations with extraversion and neuroticism as personality traits.

(4) Attributional confidence shows weak associations with the accuracy of social perception of personality traits following an interaction episode between strangers.

To address these objectives, two studies were conducted. The first, an online survey, examined the reliability and factor structure of the scale. The second, an experimental study in which pairs of same-gender strangers interacted either face-to-face or via videoconference, focused on testing discriminant and criterion-related construct validity, as well as the gender invariance of responses.

Both studies were approved by the Commission for Intra-University Surveys and Ethical Review of Empirical Research Projects of the Higher School of Economics (HSE). All participants provided informed consent for participation and the processing of personal data.

The results of these studies are presented below.

Study 1

Methods

Sample and Procedure

For the first study, conducted to pilot and test the adapted methodology, data were collected via online forms. Participants were recruited through communication channels commonly used in the university environment, including social networks, group chats, and mailing lists. The final sample consisted of 166 university students from Saint Petersburg, Russia (age range: 18–57 years, M(SD) = 20.81 $\pm$ 4.81, median = 20; 80.84% female). Most participants at the time of the study had completed secondary education (74.69%).

In the instructions, respondents were asked to recall a recent conversation lasting at least 15 minutes and to evaluate their communication partner using the questionnaire, regardless of the communication format (online or face-to-face).

Materials

The instruction text, rating scale, and items of the CL7 questionnaire were translated into Russian by three independent experts holding PhDs in social psychology. Each expert completed the translation independently, after which all versions were compared, and discrepancies were discussed until a consensus was reached. Instead of a strict forward–backward translation procedure, the researchers applied a semantic equivalence approach, focused on maintaining conceptual correspondence between the Russian and English versions of each item, taking into account the theoretical meaning of the construct. The full Russian version of the questionnaire and its scoring key are presented in Appendix 1.

The instruction read as follows: "Using a scale from 0% confidence (I can only guess) to 100% confidence (complete certainty), please rate…". Respondents were asked to evaluate seven statements using a 0–100 scale, where only multiples of 10 were available (resulting in 11 possible response options). This format was selected to improve usability for online administration. Participants were instructed to recall the most recent person they had interacted with and to answer each question with that individual in mind.

Results of Study 1

Results: Factor Structure Analysis

To examine the factor structure of the scale, an exploratory factor analysis (EFA) with Varimax rotation was conducted using Python (the factor_analyzer package). The results are presented in Table 1. The analysis confirmed the presence of a single underlying factor, which accounted for 71% of the total variance. All items demonstrated factor loadings above 0.80, except for Item 2 (loading = 0.763).

Table 1
Descriptive statistics and factor loadings for CL7 scale items

Scale items	M (SD)	Factor loading
How confident are you of your general ability to predict how he/she will behave?	6.77 (2.27)	0.822
How certain are you that he/she likes you?	6.91 (2.53)	0.763
How accurate are you at predicting the values he/she holds	6.50 (2.49)	0.865

Scale items	M (SD)	Factor loading
How accurate are you at predicting his/her attitudes?	6.49 (2.25)	0.845
How well can you predict his/her feelings and emotions?	6.71 (2.21)	0.850
How much can you empathize with (share) the way he/she feels about himself/herself	6.79 (2.39)	0.874
How well do you know him/her?	6.71 (2.58)	0.870

Additionally, to further examine the structure of the questionnaire, a confirmatory factor analysis (CFA) was conducted. All regression weights were statistically significant ($p < .001$), and no extreme discrepancies were observed between the empirical and model-implied covariances. The model met the requirements of most conventional goodness-of-fit criteria (RMSEA < .10, CFI > .95, TLI > .95, SRMR < .08) (Kline, 2016), with the exception of RMSEA, which slightly exceeded the recommended threshold. However, as noted by Kline (2016), such a deviation is not considered critical when the SRMR value remains below .08 (see Table 2).

Table 2
Model fit indices for the confirmatory factor analysis

Model	X2 (df, p)	RMSEA (90% CI)	CFI	TLI	SRMR
Study №1	38.220 (14. 0.000)	0.102 (0.064..0.142)	0.975	0.963	0.0266

Results: Reliability Analysis

To assess the reliability of the obtained unidimensional factor structure, Cronbach's alpha was calculated (Cronbach, 1951). The coefficient value of 0.94 indicated a high level of internal consistency (Evers et al., 2013). However, Cronbach's alpha has several well-documented limitations: it is sensitive to scale length (Cortina, 1993), assumes tau-equivalence—that all items have equal true-score variances (Raykov, 1997)—and is affected by non-normal item distributions (Sheng & Sheng, 2012). Therefore, following

current methodological recommendations, we additionally estimated McDonald's omega (Hayes & Coutts, 2020). The obtained omega coefficient was 0.94, which also indicates high reliability. Table 3 presents the values of Cronbach's alpha and McDonald's omega when each item was excluded from the scale.

Table 3
Cronbach's alpha and McDonald's omega coefficients with item exclusion

Scale items	Cronbach's α if item deleted	McDonald's ω if item deleted
CL_1	0.93	0.93
CL_2	0.94	0.94
CL_3	0.93	0.93
CL_4	0.93	0.93
CL_5	0.93	0.93
CL_6	0.93	0.93
CL_7	0.93	0.93

Excluding any item from the scale did not improve its reliability, except for Item 2.

Study 2

Methods

Sample and Procedure

The sample consisted of participants in a study examining perceived communication quality in both real-life and computer-mediated interactions. Participants were paired into same-gender dyads and randomly assigned to one of two experimental conditions: the first group communicated via computer-mediated interaction, while the second engaged in face-to-face communication. After removing incomplete responses, the total sample size was 163 participants.

In Group 1 (N = 83), ages ranged from 18 to 25 (M = 20.9, median = 20, SD = 1.78), with 50.6% identifying as female. In Group 2 (N = 80), ages ranged from 18 to 25 (M = 20.4, median = 21, SD = 2.06), with 51.3% identifying as female.

Before the experimental session, participants completed the Big Five Inventory–2 (BFI-2) in the Russian adaptation by Kalugin et al. (2021). Each dyad then completed a series of task-based and socio-emotional interaction exercises. After completing the tasks, participants filled out the following instruments: the Russian version of the Positive and Negative Affect Schedule (PANAS) adapted by Osin (2012); the BFI-2 (this time rating their partner rather than themselves); the Russian version of the CL7 scale; and five items from the Interpersonal Communication Satisfaction Inventory (ICSI) (Hecht, 1978) assessing communication satisfaction.

Because partners in a dyad could influence each other, the assumption of independent observations was violated. Therefore, for statistical analysis, participants were randomly split into two separate subsamples, ensuring that members of the same dyad were not included in the same dataset. All subsequent analyses were conducted separately for each subsample.

Measures

(1) Attributional Confidence. The same Russian version of the CL7 scale used in Study 1 was employed here, with a modified instruction asking participants to evaluate their communication partner in the experimental setting.

(2) Neuroticism and Extraversion. To assess divergent validity, we used scores on the Neuroticism and Extraversion subscales of the Big Five Inventory–2 (BFI-2), consistent with the procedure used to test divergent validity in the original CL7 validation (Clatterbuck, 1979). The Russian version of the BFI-2 (Kalugin et al., 2021) contains 61 items and has demonstrated high reliability and validity in prior psychometric studies.

(3) Accuracy of Partner Personality Ratings. At the beginning of the experimental session, each participant completed the BFI-2 about themselves. At the end of the interaction, participants again completed the same inventory, but this time as if they were their partner. For each participant, the score on each BFI-2 subscale was compared to the corresponding score given by their partner, who was instructed to answer as they believed the participant would respond after the interaction. For every participant, we thus obtained six discrepancy indices (one per Big Five trait and one total score) representing social perception accuracy.

(4) This approach follows the self–other discrepancy paradigm, which has been used to study perceptual asymmetries in personality disorder assessment (Carlson et al., 2013), links between asymmetry and mindfulness (Birjandi & Siyyari, 2016), and the temporal stability of self–other rating differences (Oltmann et al., 2020).

(5) Post-Interaction Anxiety. To evaluate criterion validity, we examined correlations between attributional confidence and post-interaction anxiety.

Four items were selected from the Russian adaptation of the State–Trait Anxiety Inventory–20 (STAI-20) (Osin, 2012): items 11, 15, 18, and 20 (irritable, nervous, restless, anxious). These items were chosen to correspond to the set of negative emotions used in the intergroup anxiety questionnaire by Gudykunst and Nishida (2001). We also examined correlations with overall negative affect and positive affect, consistent with the approach of Khukhlaev and Bratkina (2021).

(6) Communication Satisfaction. To further assess criterion validity, we analyzed associations between attributional confidence and communication satisfaction and effectiveness. Five items were used from the Interpersonal Communication Satisfaction Inventory (ICSI) (Hecht, 1978). Since no official Russian translation exists, the items were translated and used individually as separate measures:

   a. The interlocutor made me feel that I was being clear and that the conversation was productive.
   b. We didn't reach any conclusions or achieve anything in the conversation.
   c. I was very dissatisfied with this conversation.
   d. I felt that I could talk to this person about anything.
   e. We managed to discuss everything; each of us said what we wanted to say.

Results

Relationship between CL7 and Anxiety/Negative Affect

According to the first hypothesis, we expected that confidence in proactive attribution would be negatively associated with anxiety and negative affect during communication. The analysis revealed significant negative correlations between attributional confidence and the negative affect items irritable, restless, nervous, as well as with the Negative Affect subscale (see Table 4). A positive correlation with the Positive Affect subscale was also observed, though this association became non-significant after applying the Bonferroni correction; the correlation with the Negative Affect scale remained significant. In the second subsample, no significant associations were found. All analyses were conducted using Spearman's rank correlation coefficient.

Table 4

Correlations between the PANAS scale, its items, and CL7

Items scale PANAS-20	Correlation coefficient (r) and significance (p)	CL7	
		Sample №1	Sample №2
Irritable	r	- 0.326	- 0.041
	p	0.003	0.722
Nervous	r	- 0.196	0.092
	p	0.077	0.418
Restless	r	- 0.223	- 0.128
	p	0.044	0.259
Anxious	r	- 0.271	- 0.028
	p	0.014	0.806
Negative Affect	r	- 0.320	- 0.056
	p	0.003	0.625
Positive Affect	r	0.248	0.161
	p	0.025*	0.157

Relationship between CL7 and Communication Satisfaction

The second hypothesis proposed a positive association between confidence in proactive attribution and communication satisfaction. After applying the Bonferroni correction, no significant correlations were found between CL7 scores and any of the satisfaction items in either Subsample 1 or Subsample 2 (see Table 5).

Without applying the Bonferroni correction, significant correlations were observed between CL7 and two out of five satisfaction items in Subsample 1; however, no significant correlation with the total communication satisfaction score was found in either subsample. All analyses were conducted using Spearman's rank correlation coefficient.

Table 5
Attributional confidence and communication satisfaction

Item	Correlation coefficient (r) and significance (p)	*CL7*	
		Sample 1	Sample 2
The interlocutor made me feel that I was being clear and that the conversation was productive.	*r*	0.271	0.148
	p	0.013*	0.189
We didn't reach any conclusions or achieve anything in the conversation. **	*r*	–0.046	–0.102
	p	0.677	0.370
I was very dissatisfied with this conversation. **	*r*	0.032	0.022
	p	0.773	0.849
I felt that I could talk to this person about anything.	*r*	0.226	0.047
	p	0.039*	0.681
We managed to discuss everything; each of us said what we wanted to say.	*r*	0.040	–0.093
	p	0.717	0.412
Total score across all five items (Cronbach's α = 0.701, McDonald's ω = 0.721)	*r*	0.175	–0.004
	p	0.114	0.970

Note: *After applying the Bonferroni correction for multiple hypothesis testing, the statistical significance of the results disappears. **Reverse-scored items; values were recoded so that higher scores indicate greater communication satisfaction.

Reliability and Relationships with Personality Traits

As in the first study, the reliability of the scale was evaluated using Cronbach's alpha (0.88 for both Subsample 1 and Subsample 2) and McDonald's omega (0.88 for both subsamples). Both coefficients indicate high internal consistency of the scale, consistent with the findings of Study 1.

The third hypothesis proposed that confidence in proactive attribution would be weakly associated with Extraversion and Neuroticism as personality traits. In line with the results of the original study, no significant correlations were found between CL7 scores and the Neuroticism subscale in either subsample. However, in Subsample 1, a weak but significant correlation was observed between CL7 and Extraversion, which became non-significant after applying the Bonferroni correction (see Table 6). In Subsample 2, a positive association was found with the Openness to Experience subscale.

All analyses were conducted using Spearman's rank correlation coefficient.

Additionally, a gender differences analysis was performed using Student's t-test, which revealed no statistically significant differences between men and women in either subsample.

Table 6

Correlations between CL7 and BFI-2 subscales

BFI-2 subscales	Correlation coefficient (r) and significance (p)	CL7	
		Sample 1 (n = 83)	Sample 2 (n = 80)
Extraversion	r	0.268	0.218
	p	0.014*	0.052
Neuroticism	r	−0.076	−0.125
	p	0.492	0.270
Openness to Experience	r	0.202	0.242
	p	0.068	0.030*
Agreeableness	r	0.165	0.026
	p	0.136	0.821
Conscientiousness	r	0.105	0.002
	p	0.347	0.983

Note: *after applying the Bonferroni correction for multiple hypothesis testing, the statistical significance of the results disappears.

Relationship between CL7 and Social Perception Accuracy

The fourth hypothesis proposed that confidence in proactive attribution would be weakly associated with the accuracy of social perception of personality traits following an interaction between strangers. The analysis revealed no significant correlations—neither with the total absolute discrepancy score across all BFI-2 subscales nor with any individual subscales (see Table 7). All analyses were conducted using Spearman's rank correlation coefficient.

Table 7

Correlations between CL7 scores and the accuracy of social perception of personality traits.

Absolute discrepancy for BFI-2 subscales	Correlation coefficient (r) and significance (p)	CL7	
		Sample 1	Sample 2
Extraversion	*r*	–0.122	–0.084
	p	0.280	0.460
Conscientiousness	*r*	0.036	0.048
	p	0.748	0.675
Neuroticism	*r*	–0.008	–0.036
	p	0.947	0.750
Openness to Experience	*r*	0.199	0.029
	p	0.076	0.797
Agreeableness	*r*	0.072	–0.021
	p	0.524	0.853
Total discrepancy (across all subscales)	*r*	0.004	0.019
	p	0.975	0.866

Discussion

The exploratory factor analysis (EFA) conducted in Study 1 confirmed the unidimensional structure of the Russian-language version of the Attributional Confidence Scale. The confirmatory factor analysis (CFA) results, based on model–data fit indices, also supported the single-factor structure of the scale, consistent with the findings obtained for the original CL7 version (Clatterbuck, 1979). Reliability was examined using both Cronbach's alpha and McDonald's omega, allowing us to compensate for the limitations of each method and to provide a more comprehensive assessment of internal consistency. The reliability coefficients were high and comparable to the best results reported for the original English-language version (Clatterbuck, 1979). A repeated reliability analysis in Study 2 further confirmed these findings, demonstrating strong internal consistency across samples.

To test criterion validity (Hypothesis 1: confidence in proactive attribution is negatively related to anxiety during communication), selected items from the State–Trait Anxiety Inventory–20 (STAI-20) related to anxiety experiences were used. In the first subsample, a significant negative correlation was observed between attributional confidence and the items *irritable*, *restless*, *nervous*, as well as with the Negative Affect subscale, and a positive correlation with Positive Affect. This pattern is consistent with the findings of Khukhlaev and Bratkina (2021) obtained using a modified version of the Attributional Confidence Scale. Within the framework of Anxiety/Uncertainty Management Theory (AUM), a relationship between anxiety and attributional confidence is theoretically expected (Gudykunst, 1993, 1995) and has been empirically confirmed in several studies (Gudykunst & Shapiro, 1996; Gudykunst & Nishida, 2001; Khukhlaev & Bratkina, 2021). However, this association did not replicate in the second subsample, indicating that the relationship is weak and possibly unstable—at least in experimental settings involving dyadic interactions between previously unacquainted same-gender students.

To further assess criterion validity, we analyzed the relationship between attributional confidence and items reflecting communication satisfaction, conceptualized as a component of perceived communication effectiveness (Hypothesis 2: confidence in proactive attribution is positively related to communication satisfaction). In the first subsample, a positive association was found with two of the five items—"The interlocutor made me feel that I was being clear and that the conversation was productive" and "I felt that I could talk to this person about anything." These findings align with theoretical assumptions (Gudykunst, 1993, 1995) and prior empirical research (Gudykunst et al., 1986; Gudykunst & Shapiro, 1996; Gudykunst & Nishida, 2001; Presbitero & Attar, 2018; Nadeem & Koschmann, 2021). However, no significant associations were observed in the second subsample. It should also be noted that communication satisfaction was used here as a proxy for communication effectiveness, since the latter could not be measured directly. Thus, the observed associations can be regarded as partial and limited confirmations of criterion validity. Future studies using more ecologically valid interaction settings are required to draw firmer conclusions.

To evaluate divergent validity (Hypothesis 3: confidence in proactive attribution is weakly related to Extraversion and Neuroticism as personality traits), we used the Neuroticism and Extraversion subscales of the Big Five Inventory–2 (BFI-2). Consistent with the original study (Clatterbuck, 1979), no significant correlation was found with Neuroticism in either subsample. A weak significant association with Extraversion emerged in one subsample only. Overall, the results suggest that confidence in proactive attribution is not strongly related to personality traits, supporting our divergent validity hypothesis.

We also found no significant correlations between attributional confidence and social perception accuracy (Hypothesis 4: confidence in proactive attribution is weakly related to the accuracy of personality perception following interaction between strangers). This finding is theoretically consistent: the accuracy of judgments about another person

and confidence in those judgments can differ substantially (Clatterbuck, 1979; Berger & Calabrese, 1975) and may converge only when feedback is available (Samochowiec & Florack, 2010). Additionally, no significant gender differences were observed, consistent with both theoretical expectations and the validation results of the original CL7 scale (Clatterbuck, 1979). Collectively, these results provide support for the divergent construct validity of the Russian version of the scale.

It was not possible to test the convergent validity of the Proactive Attributional Confidence Scale due to the absence of comparable instruments in Russian that measure related constructs.

The study has several limitations. All data were obtained from student samples, and the first study—examining the factor structure—was conducted on a gender-imbalanced sample. Evidence for criterion and divergent construct validity was gathered under laboratory conditions, which may differ from natural communication settings, and the results are limited to initial same-gender interactions between previously unacquainted individuals. Under different communicative contexts, the relationships between attributional confidence, anxiety, social perception accuracy, and communication satisfaction may vary.

Conclusion

The present research confirmed the unidimensional structure of the Russian version of the Proactive Attributional Confidence Scale, consistent with the original English version. The scale demonstrated high reliability, as indicated by Cronbach's alpha and McDonald's omega, reflecting good internal consistency and measurement stability.

Divergent validity received strong support: confidence in proactive attribution was weakly or non-significantly associated with Extraversion, Neuroticism, and social perception accuracy of one's partner. Criterion validity received partial confirmation, with weak and inconsistent negative correlations observed with negative affect and post-interaction anxiety, as well as limited associations with communication satisfaction. Moreover, evidence was obtained for the gender invariance of the scale.

Overall, the adapted Russian version of the CL7 scale exhibits the theoretically expected one-factor structure, high reliability, and adequate validity, meeting the core psychometric standards and demonstrating potential applicability in psychological and communication research. Nevertheless, further refinement is warranted—particularly through testing associations with additional constructs, improving response scaling, and expanding item content based on contemporary theoretical developments.

References

Antheunis, M., Valkenburg, P., & Peter, J. (2010). Getting acquainted through social network sites: Testing a model of online uncertainty reduction and social attraction. *Computers in Human Behavior, 26*, 100–109. https://doi.org/10.1016/j.chb.2009.07.005

Baruh, L., & Cemalcılar, Z. (2018). When more is more? The impact of breadth and depth of information disclosure on attributional confidence and interpersonal attraction to a social network site profile owner. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 12*(1), Article 1. https://doi.org/10.5817/CP2018-1-1

Berger, C. (1968). Sex differences related to self-esteem factor structure. *Journal of Consulting and Clinical Psychology, 32*(4), 442–446. https://doi.org/10.1037/H0026092

Berger, C. R. (2005). Interpersonal communication: Theoretical perspectives, future prospects. *Journal of Communication, 55*(3), 415–447. https://doi.org/10.1111/j.1460-2466.2005.tb02680.x

Berger, C. R., & Calabrese, R. J. (1975). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. *Human Communication Research, 1*(2), 99–112. https://doi.org/10.1111/j.1468-2958.1975.tb00258.x

Birjandi, P., & Siyyari, M. (2016). Agreeableness and conscientiousness as predictors of university students' self/peer-assessment rating error. *Irish Educational Studies, 35*(1), 117–135. https://doi.org/10.1080/03323315.2016.1147973

Carlson, E. N., Vazire, S., & Oltmanns, T. F. (2013). Self–other knowledge asymmetries in personality pathology. *Journal of Personality, 81*(2), 155–170. https://doi.org/10.1111/j.1467-6494.2012.00794.x

Clatterbuck, G. W. (1979). Attributional confidence and uncertainty in initial interaction. *Human Communication Research, 5*(2), 147–157. https://doi.org/10.1111/j.1468-2958.1979.tb00630.x

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology, 78*(1), 98–104. https://doi.org/10.1037/0021-9010.78.1.98

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297–334. https://doi.org/10.1007/BF02310555

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*, 349–354. https://doi.org/10.1037/H0047358

Duronto, P. M., Nishida, T., & Nakayama, S. (2005). Uncertainty, anxiety, and avoidance in communication with strangers. *International Journal of Intercultural Relations, 29*(5), 549–560. https://doi.org/10.1016/j.ijintrel.2005.08.003

Evers, A., Hagemeister, C., Høstmælingen, A., Lindley, P., Muñiz, J., & Sjöberg, A. (2013). *EFPA Review Model for the Description and Evaluation of Psychological and Educational Tests* (Version 4.2.6).

Gudykunst, W. B. (1993). Toward a theory of effective interpersonal and intergroup communication: An anxiety/uncertainty management perspective. In R. L. Wiseman & J. Koester (Eds.), *Intercultural communication competence* (pp. 33–71). Newbury Park, CA: Sage.

Gudykunst, W. B. (2005). An anxiety/uncertainty management (AUM) theory of effective communication: Making the mesh of the net finer. In W. B. Gudykunst (Ed.), *Theorizing about intercultural communication* (pp. 281–322). Thousand Oaks, CA: Sage.

Gudykunst, W. B., & Nishida, T. (1986). Attributional confidence in low- and high-context cultures. *Human Communication Research, 12*(4), 525–549. https://doi.org/10.1111/j.1468-2958.1986.tb00090.x

Gudykunst, W. B., & Nishida, T. (2001). Anxiety, uncertainty, and perceived effectiveness of communication across relationships and cultures. *International Journal of Intercultural Relations, 25*(1), 55–71. https://doi.org/10.1016/S0147-1767(00)00042-0

Gudykunst, W. B., & Shapiro, R. B. (1996). Communication in everyday interpersonal and intergroup encounters. *International Journal of Intercultural Relations, 20*, 19–45. https://doi.org/10.1016/0147-1767(96)00037-5

Gudykunst, W. D. (1995). Anxiety/uncertainty management (AUM) theory: Current status. In R. L. Wiseman (Ed.), *Intercultural communication theory* (pp. 8–58). Sage.

Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But.... *Communication Methods and Measures, 14*(1), 1–24. https://doi.org/10.1080/19312458.2020.1718629

Hecht, M. L. (1978). The conceptualization and measurement of interpersonal communication satisfaction. *Human Communication Research, 4*, 253–264. https://doi.org/10.1111/j.1468-2958.1978.tb00614.x

Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology, 63*(6), 597–606. https://doi.org/10.1086/222355

Imai, T., Taniguchi-Dorios, E., & Umemura, T. (2021). Relational uncertainty and relationship satisfaction in romantic relationships: Self-disclosure as a moderator and mediator. *Current Psychology, 42*, 1–13. https://doi.org/10.1007/s12144-021-01478-0

Jensen, A. (1958). The Maudsley Personality Inventory. *Acta Psychologica, 14*, 314–325. https://doi.org/10.1016/0001-6918(58)90023-4

Kalugin, A. Yu., Shchebetenko, S., Mishkevich, A. M., Soto, C., & John, O. P. (2021). Psychometrics of the Russian-language version of the Big Five Inventory–2. *Psychology. Journal of the Higher School of Economics, 18*, 7–33. https://doi.org/10.17323/1813-8918-2021-1-7-33 (in Russ.).

Khukhlaev, O. E., & Bratkina, M. A. (2021). Anxiety and uncertainty in intercultural interaction: An experimental study. *Russian Psychological Journal, 15*(4), 78–90. https://doi.org/10.21702/rpj.2021.4.6 (in Russ.).

Khukhlaev, O. E., Gritsenko, V. V., Dagbaeva, S. B., Konstantinov, V. V., Kornienko, T. V., Kulesh, E. V., & Tudupova, T. Ts. (2022). Intercultural competence and the effectiveness of intercultural interaction. *Experimental Psychology, 15*(1), 88–102. https://doi.org/10.17759/exppsy.2022150106 (in Russ.).

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). New York, NY: Guilford Press.

Lee, T. H., & Ng, T. K. (2024). Perceived general similarity and relationship satisfaction: The role of attributional confidence. *European Journal of Social Psychology*. https://doi.org/10.1002/ejsp.3085

Martin, J., & Westie, F. (1959). The tolerant personality. *American Sociological Review, 24*, 521–528.

Mehrabian, A., & Epstein, N. B. (1972). A measure of emotional empathy. *Journal of Personality, 40*(4), 525–543. https://doi.org/10.1111/j.1467-6494.1972.tb00078.x

Nadeem, M. U., & Koschmann, M. (2021). Does mindfulness moderate the relationship between anxiety, uncertainty, and intercultural communication effectiveness among students in Pakistan? *Current Psychology, 42*, 1–13. https://doi.org/10.1007/s12144-021-01429-9

Neuliep, J. (2017). Anxiety/Uncertainty Management (AUM) Theory. In *International Encyclopedia of Intercultural Communication*. https://doi.org/10.1002/9781118783665.ieicc0007

Neuliep, J. W. (2012). The relationship among intercultural communication apprehension, ethnocentrism, uncertainty reduction, and communication satisfaction during initial intercultural interaction: An extension of AUM theory. *Journal of Intercultural Communication Research, 41*(1), 1–16. https://doi.org/10.1080/17475759.2011.623239

Newcomb, T. M. (1961). *The acquaintance process*. New York, NY: Holt, Rinehart & Winston.

Oltmanns, J. R., Jackson, J. J., & Oltmanns, T. F. (2020). Personality change: Longitudinal self–other agreement and convergence with retrospective reports. *Journal of Personality and Social Psychology, 118*(5), 1065–1079. https://doi.org/10.1037/pspp0000238

Orben, A., & Dunbar, R. (2017). Social media and relationship development: The effect of valence and intimacy of posts. *Computers in Human Behavior, 73*, 489–498. https://doi.org/10.1016/j.chb.2017.04.006

Osin, E. N. (2012). Measuring positive and negative affect: Development of a Russian-language analogue of the PANAS. *Psychology. Journal of the Higher School of Economics, 9*, 91–110. (in Russ.).

Presbitero, A., & Attar, H. (2018). Intercultural communication effectiveness, cultural intelligence, and knowledge sharing: Extending AUM theory. *International Journal of Intercultural Relations, 67*, 35–43. https://doi.org/10.1016/j.ijintrel.2018.08.004

Raykov, T. (1997). Scale reliability, Cronbach's coefficient alpha, and violations of essential tau-equivalence with fixed congeneric components. *Multivariate Behavioral Research, 32*(4), 329–353. https://doi.org/10.1207/s15327906mbr3204_2

Razvalyaeva, A. Yu., & Polishchaya, N. A. (2021). Psychometric properties of the Russian three-factor version of the Interpersonal Sensitivity Measure. *Counseling Psychology and Psychotherapy, 29*(4), 73–94. https://doi.org/10.17759/cpp.2021290405 (in Russ.).

Samochowiec, J., & Florack, A. (2010). Intercultural contact under uncertainty: The impact of predictability and anxiety on willingness to interact with a member of an unknown cultural group. *International Journal of Intercultural Relations, 34*(5), 507–515. https://doi.org/10.1016/j.ijintrel.2010.05.003

Shannon, C. E., & Weaver, W. (1949). *The mathematical theory of communication*. Urbana, IL: University of Illinois Press.

Sheng, Y., & Sheng, Z. (2012). Is coefficient alpha robust to non-normal data? *Frontiers in Psychology, 3*, 1–34. https://doi.org/10.3389/fpsyg.2012.00034

Sobchik, L. N. (2005). *Psychology of individuality: Theory and practice of psychodiagnostics*. St. Petersburg: Rech'. (in Russ.).

Stephan, W. G. (2014). Intergroup anxiety: Theory, research, and practice. *Personality and Social Psychology Review, 18*(3), 239–255. https://doi.org/10.1177/1088868314530518

Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues, 41*(3), 157–175. https://doi.org/10.1111/j.1540-4560.1985.tb01134.x

Troldahl, V. C., & Powell, F. A. (1965). A short-form dogmatism scale for use in field studies. *Social Forces, 44*, 211–214. https://doi.org/10.1093/sf/44.2.211

Wagner, T. (2018). When offline seeks information online: The effect of modality switching and time on attributional confidence and social attraction. *Communication Research Reports, 35*, 1–10. https://doi.org/10.1080/08824096.2018.1512484

Received: November 14, 2024
Revised: March 22, 2025
Accepted: August 14, 2025

Author Contributions

Arseniy V. Leontyev — selection of statistical methods and statistical data analysis, interpretation of statistical findings, writing the initial draft of the manuscript.

Elina S. Tsigeman — data collection, manuscript editing.

Larisa V. Mararitsa — study supervision, research design development, writing the final version of the manuscript.

Author Details

Arseniy V. Leontyev — Student, Saint Petersburg State University, St. Petersburg, Russian Federation; ORCID ID: https://orcid.org/0009-0000-5984-2403; e-mail: arsleokan@gmail.com

Elina S. Tsigeman — Junior Research Fellow, Saint Petersburg Branch, National Research University "Higher School of Economics" (HSE University), St. Petersburg, Russian Federation; ORCID ID: https://orcid.org/0000-0002-7966-5982

Larisa V. Mararitsa — Cand.Sci. (Psychology), Head of the Laboratory of Evidence-Based Psychology of Health and Well-being, Saint Petersburg, Russian Federation; ORCID ID: https://orcid.org/0000-0003-3858-5369

Conflict of Interest Information

The authors have no conflicts of interest to declare.